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ISSUE 31 • APRIL 1989 • £1.50

AMSTRAD PCW

8000 PLUS

8256 • 8512 • 9512

DIY PUBLISHING

Can you launch a book without the professionals?

PLUS

- WHAT IS CP/M?
- 24 PIN PRINTER DRIVERS
- LOCOFILE TUTORIAL
- NEW HELP PAGES

LISTINGS GALORE • LOCOSCRIPT TIPS • LANGFORD'S COMMENT

cp software

NEW

CLOCK CHESS 89

CLOCK CHESS 89 is the **strongest** and **most versatile** chess program yet for your PCW computer. It has the most advanced 3D graphics, the widest range of options, the power to play incredibly fast and the intelligence to selectively search deep into the position. CLOCK CHESS 89 has been tested against a wide range of other chess programs and has shown itself to be stronger than any of them.

Written using the latest techniques CLOCK CHESS 89 does not use the usual "brute force" method of searching for the best move, but instead is packed with chess knowledge which uniquely allows it to search only those moves which are "sensible" or "interesting" and not to waste time analysing lines of play which it regards as "trivial". In addition, it has a variable search depth which results in a deeper search of active lines, thus reaching those parts that other chess programs cannot.

- Now with added strategic knowledge to give an extra edge
- massive 44,000 byte, user extendable, openings library
- stunning 3-D graphics
- annihilates other PCW chess programs
- largest range of options, cursor controlled for easy move input
- special easy mode for beginners
- full display of its thought processes gives you a fascinating insight into its search mechanism
- perfect understanding of all the rules of chess including underpromotion, draw by repetition and the fifty move rule
- achieves all the standard mates including those occurring with minor pieces in the endgame - well able to handle difficult pawn endings
- makes full use of the extra memory of the 256K and 512K PCW

"CLOCK CHESS is a lively and interesting opponent. An aggressive program that keeps you on your toes it dices up Colossus Chess nicely" Mike Basman, UK Chess Champion.

CLOCK CHESS 89 IS COMPATIBLE WITH ALL PCWs £19.95

NEW

LIGHTNING BASIC PLUS

80+ NEW BASIC KEYWORDS AND 100% PCW COMPATIBILITY, THE ULTIMATE PCW MALLARD BASIC EXTENSION.

First ever program able to trap Mallard Basic's command list. Produces devastating graphical output with fast smooth sprites for the games programmer and icons for more professional software. We guarantee you will astound yourself with your capacity for creativity using this amazing software.

Many original features provide the ideal environment for the Basic programmer. Now, Special Plus version adds yet more functions.

- circles, ellipses, regular and irregular polygons
- run CP/M program from within BASIC I
- high and medium resolution graphics, plots, lines, fills
- multiple sprites and icon graphics
- User Definable Graphics, new character sets, 4-tone colour
- new editing facilities, variable list, search, ascii string dump etc.
- save screens and instant multi-screen recall
- full A4 screen dump to dot matrix printer
- timer, sound routines etc. etc.
- easy cursor and printer control
- all functions use simple-to-use BASIC keywords
- masses of demonstration programs supplied on disc
- "knocks spots off other basics!"

LIGHTNING BASIC IS COMPATIBLE WITH ALL PCWs £24.95

NEW

Z80X68000 SOURCE CODE TRANSLATOR

Z80 to 68000 Source Code X-Translator for ATARI ST on 3.5" disc.

Are you an assembler language programmer?
Do you have a library of source code 'chunks' you keep re-using?
Do you want fast, efficient conversion to ST and AMIGA?

Then Z80X68000 is the tool for you.
Now instead of re-writing whole programs or program chunks for 68000 computers, you can directly translate from Z80 source code, edit the 68000 source code thus created and/or directly assemble it.

Remember, most programs consist of an outer shell, inner logical code, system dependant code and graphics routines. Z80X68000 will easily convert the outer shell and the inner logical code giving you a bug-free start to get your software up and running.
You can convert from one computer to another as easily as if they both used the same micro-processor.

Z80X68000 produces source code that runs at 2MHz Z80 equivalent on an ST. With a quick manual optimisation of time critical loops you can achieve 12MHz equivalence or better.

Z80X68000 for ANY ATARI ST on 3.5" disc + documentation £99.95

NEW

CLASSIC GAMES 4 Special Edition

THESE FOUR CLASSIC GAMES FROM CP SOFTWARE NOW COMPILED ON ONE DISC, BEAUTIFULLY PACKAGED, MAKES THE IDEAL GIFT FOR THE PCW OWNER.

CLOCK CHESS 88 - "strongest chess for PCW, 3D graphics are well done, enjoyable to play against, 5 out of 5" - 8000 PLUS

BRIDGE PLAYER 2000 with TUTOR "very well thought through, fine display, gets the most out of Bridge on the computer" - PC PLUS

BACKGAMMON - "good implementation of the game, uses the doubling cube properly, good graphics" - 8000 PLUS

DRAUGHTS "extremely strong play, 3D graphics are pleasant to use" - 8000 PLUS

FOUR GREAT GAMES FOR THE PRICE OF ONE.

CLASSIC GAMES 4 - Special Edition

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NEW

all you ever wanted to know PLUS 2 about GRAPHICS, THE UNIVERSE AND EVERYTHING FOR PCW but were afraid to ask

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- 5 KEYWORDS**
Moving forewords
- 7 NEWS**
Remember - you saw it here first
- 17 AMSTRAD MODEM**
A look at the new Amstrad SM2400
- 20 CASE IN POINT**
Prehistoric PCWs
- 23 ASSEMBLER**
A question of stack control
- 26 COMMS**
Exploring the soft options
- 29 WRITING A THESIS**
The 'do's and 'don't's
- 33 PROTEXT DATABASE**
The database you never knew you had
- 34 WHAT IS CP/M?**
The story of a favourite operating system
- 38 QUICKIES**
Two new databases on test
- 41 24-PIN PRINTER DRIVER**
Locomotive's new printer driver reviewed
- 42 LOCOTOY**
Are Locomotive winding up with a bit of fun?
- 45 ADVENTURE GAMES**
Can you get into them?
- 46 GILLIGAN'S GUIDE**
The PCW's well and truly on the map
- 49 LOCOFILE**
Part 2: Getting data into the datafile



10 DIY PUBLISHING

Launching your own books by yourself

PCW TO PC 54
Common applications

BOOKS 57
From technical writing to programming in C

LANGFORD 59
Remington Reveries

LISTINGS 61
BASIC fun at your fingertips

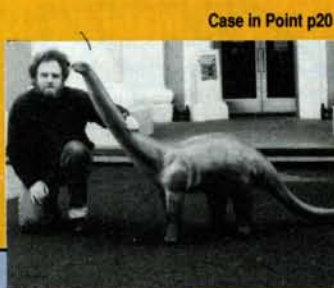
TIPOFFS 68
5 pages including new Question Time

GOOD SOFTWARE GUIDE 75
Spreadsheets, Graphics and Games

SPECIAL OFFERS 80
Don't think about it for too long!

POST SCRIPT 86
You have your say

ABANDON EDIT 90
Simply outrageous



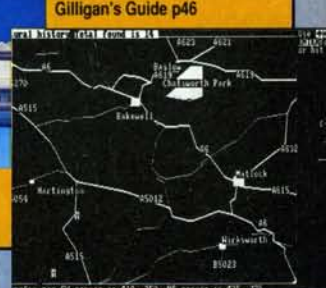
Case in Point p20



What is CP/M? p34



24 Pin Printer Drivers p41



Gilligan's Guide p46

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- * Many improvements based on customer feedback *

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"Protext is the solution to all Locoscript's drawbacks" PCW

"Makes Locoscript look like a snail" 8000 PLUS

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"Arnor's clear, concise manual will have you programming confidently very rapidly" AMSTRAD ACTION

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- Stand alone generator produces COM files
- * Protext compatible editor: * - Fast and easy to use - Two file editing -
- On screen help - Fully configurable - Powerful find and replace -
- Keyboard macros - Exec files - Compile directly from editor -

"Streets ahead in terms of programming power" AMSTRAD ACTION

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- * 8080 mode * Linking facility * Create object files for use with C *

Window based monitor, with:

- * line assembler * disassembler * memory editor * find string * relocate
- * move memory * compare memory * fill memory * bank switching *
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- * stack checking * conditional breakpoints * trace mode * edit registers
- * Editor is program mode of Protext (as for C, above) *

"Maxam II - now the best gets even better" CWTA CPC

"Maxam II is stunning ... the most complete and competent programming package around. Simple, speedy and sophisticated" AMSTRAD ACTION

Special Offer:

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Protext Office	£34.95	Maxam II and C	£69.95
Protext Tutorial disc	£7.00	BCPL	£24.95
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All programs work on Amstrad PCW8256/8512, PCW9512, CPC6128
Orders normally despatched on the same day they are received.

Protext is also available at £99.95 for IBM PC,XT,AT,PS/2 and compatibles, Atari ST and Commodore Amiga, and requires a minimum of 512K RAM.

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CHANGE OF LIFE

Various groups of people – some paid but many offering their services for nothing – have said that computers would change our lives; they started saying it around 1940, have continued to the present day, and of course they were right.

The thing about all this change, though, is that most of it has been imposed on us. For example computerised bank accounts may be the only way to live on fast credit but is it necessarily a good thing? Certainly it is for the banks and so we have it whether we want it or not.

Computers have affected every area of our lives, all the way from those endless grey dot matrixed invoices that come through the door asking for money to the constant stream of paper bleating that you have been chosen along with only 128,872,691 other people to enter a Grand Draw: first prize – a holiday on Mustique with Fergie and Andy, second prize – an opportunity to buy into a limited edition of hand painted ceramic Victorian door knobs individually signed by the sculptor.

None of this is what I imagined by computers changing my life; perhaps naively, I'd assumed I'd have some say in the process; I thought it would be me in control of all this marvellous technology, imposing my will on it. Instead it seemed to be only the government and the bigger businesses that had the use of it and all I did was get

to stand there and play stooge.

Of course it was clear that the man on the street – me – had a lot of interest in computers so we were given a chance to try them for ourselves; slow, tape loading machines with no memory that tied up the television for endless hours of Pac-man, hardly the stuff of dreams.

This early exposure to home computers threw me a bit, there didn't seem much relation between what I'd read and these rather limited devices. Disappointed, I lost much of my interest and took up other pursuits.

It was via one of these other interests, in this case writing unpublished novels, that I came to the PCW. Like a lot of other people I bought it to replace a typewriter and it was only after several months of use that I became aware of what I'd really bought.

Sitting on my desk and churning out the words was the powerful computer I'd lusted after several years before. I'd bought a computer, used it to change my life, and I hadn't even noticed.

Steve Pataj

New member of staff shock

We're delighted to welcome a new staff writer to the joys of journalistic penury on 8000 Plus. Tim Smith comes to us from the Stock Exchange where he spent many a happy hour playing Monopolies and Mergers, making bad jokes such as "Well, on the day it's your only option isn't it?" or "There's no need to feel guilty" and giving insider information to anyone who could afford the price of a new Porsche Targa. With the economic climate as drizzly as it is the crash of the 8512 rang louder than the one of 1987. He leaves behind him thirty seven hounds tooth suits and an a briefcase called George.

And what's yours called?

If you have a favourite piece of software – other than LocoScript, naturally – we'd like to hear about it. Write and tell us what it is, why you use it, and why you think it's the best. There are going to be cash prizes for those we publish and who knows, we may force you to spend a couple of pages amplifying your thoughts for us.

Send your missives to – Family Favourites, 8000 Plus, 4 Queen Street, Bath, BA1 1EJ.



Make someone happy with a call

But not us, please. You need only look at the masthead to see how few of us actually work full time in the office (of course there are always several sleeping under the desks). There might be something in the water causing it but whatever the reason a lot of people want to talk with us lately.

Now we really like talking – it beats working – but it has got a bit out of hand, so please don't call, write a letter; to encourage you to do this we've started a new letters section called Question Time where we will do our best to give comprehensive, considered replies to any problems that don't make us blush.

8000 PLUS

8000 Plus
The Merry May issue will be brightly breaking out all over the newsagents shelves on the 27 april. Of course they will soon be picked and seen no more so order your copy today

Hold the tenth page

In the finest traditions of software houses Database have failed to deliver the goods on Son of Mini Office. Despite being promised a working copy many weeks ago we are still waiting with bated breath – and have now all gone a rather interesting shade of blue.

Anyone involved in any way with the computer industry has been told about this or that wonderful piece of software which will be available on, for instance, April

1 – and we now all know enough to ask which year the company is referring to.

In this case, however, we had been told that it had come back from the programmer and was ready to be mastered, so we committed ourselves to reviewing it. Never again; if it can't be bashed hard against the edge of the desk then it's probably a figment of somebody's fevered imagination.



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1 ply plain - 2000 sheets	£23.95
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Plain white - 1000 sheets	£14.95
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One Wide 3 1/2" x 1 7/16" - 500	£6.95
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One Wide 3 1/2" x 1 7/16" - 2000	£21.95
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If you own machines other than the Amstrad PCW range and the Amstrad PC (or would like to) please telephone us for prices and availability.

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Pocket Protext: Wordpro. Only	£27.95
Locofile - links with Loco II	£27.75
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Locomail II	£23.95
Locoscript II	£17.95
Digit 'E' Type - Just Type And It Prints	
Direct To Printer!	£27.75
M.A.S.S. Easy Labeller	£28.75

INTEGRATED SYSTEMS

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Camsort Cambase v1	£35.95
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Also see Cavalier Specialist Programs	

ACCOUNTS

If you are unsure exactly which package you need for your particular business please 'phone and we will describe the strengths & weaknesses of the various packages in clear jargonless terms - but leave you to decide.
You probably need help!

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Newsboy: Newspaper Del. - Database	£55.95
Re-Chord: Music Library - Database	£29.95

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Purch/Nom	£97.75
PSPN - Int. Sales/Purch/Nom	£73.45
PPAY - Payroll (And Others)	£37.25

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All Together Now?

We hinted in the February News Plus (see Reload those Magazines) that following the merger of our three rivals the front cover of the resulting new magazine would need to be tidied up.

The story so far is that Focus magazines (publishers of Your Amstrad PCW) bought Amstrad PCW Magazine – the official Amstrad magazine published by Avralite – which had previously bought Computing with the Amstrad PCW. Things move rapidly when it comes to PCWs (except scrolling from page 1 to 10 in Locomotif 1) and this (r)evolutionary cycle has brought us Amstrad PCW Magazine published by Focus. So the name of the official publication remains to front the three way merger.

The word from what used to be Your Amstrad PCW is that the tripartite merger was the most practical move to make under the circumstances; and bearing in mind their competition who would disagree?

Alan Sugar in Court Shocker

Cranfield Institute of Technology which specializes in post-graduate teaching has appointed Alan Sugar, reading yearly accounts, to its supreme constitutional body 'The Court'. Both parties to this co-joining have obvious interests in the realms of technology; the institute having formed its own companies in the past for the purpose of marketing its own research.

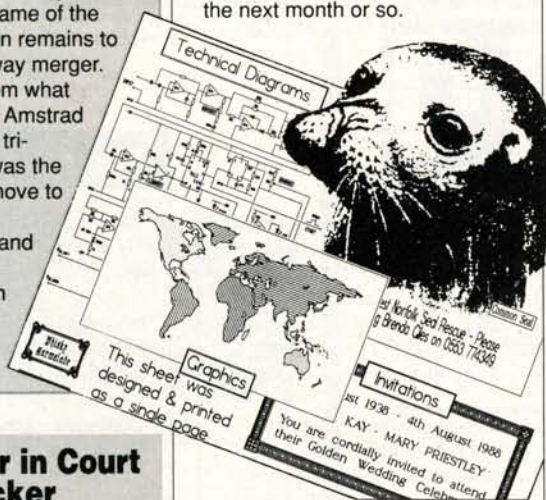
Mr. Sugar along with 300 other Members of Court, including John Wakeham MP, will be responsible for statute making and appointing the chancellor of the institute.

It is ironic that this should come at the same time as Amstrad's announcement of their first ever drop in profits. Amstrad's 1988 accounts show a drop in profits of around fifteen million pounds and the stock market reacted with customary swiftness by knocking some thirty two million off the value of Mr Sugar's personal share holding.

Desirous Designs

This one should stop the sneerers sneering when they talk about the graphic abilities of the PCW. Micro Design is a new desktop publishing package, sorry 'Integrated Page Processor', from Uttoxeter based Creative Technology. Seeing it went some way to cheering us up as we made our weary way around the Which Computer Show. One of the more impressive features of the package was the speed at which the pre-release version (for the PCW) drove the 8512 screen.

Although Micro Design is only currently available for the IBM PC and compatibles Creative Technology claim that the PCW version running at the show will be properly de-bugged and ready for us to review within the next month or so.



Grow Bags

There are many other printers in the world and your PCW can work with most of them. It's just that getting your hands on them and then setting them up can appear daunting if you have only ever used the integrated PCW equipment. It is likely, however, that at sometime in the future you are going to find a need for a different printer.

Epson, who also make printers such as the LX80 and FX80, which will also work with the PCW have recently announced the appointment of two new trading partners (resellers or distributors to you and I); these being Computacenter and Businessland. This allying of a major hardware manufacturer with two large stores will provide Epson with twenty six new outlets and the user with easier access and greater after care. It will also provide Epson with the ability to meet its planned 40% growth rate for the year ahead.

NEWS

Which computer show?

The best thing about the Which Computer? Show was the discovery that you can get straight off the train and fall into it. From there it proved all downhill.

Computer shows stand or fall on the amount of excitement they can generate in the minds of those attending. Computers being fairly exciting things anyway the stall holders don't have to work all that hard, but they have to work harder than they appeared to be doing in Birmingham.

Being oriented toward business shouldn't mean being prepared to accept boredom; all right, perhaps there weren't any exciting new product releases to get everyone crowding around the stands but that doesn't excuse the lack of effort being put into promoting existing product.

The Which Computer? Show is hailed as the premier business computer show so it seems reasonable to expect both a degree of expertise on the hardware and software and a lot of selling effort. While some (few) exhibitors displayed a commendable level of expertise theirs seemed to be manned (and womanned) by those the companies concerned clearly thought they could spare (which is to say those who wouldn't be missed).

As for the sales effort – which is what gives any show most of its excitement – this was totally lacking. If there was any selling going on it was of the completely passive, look at this nice shop window, variety: unfortunately, having looked in there were no doors to go through and examine the goods. The fact is that having a leaflet shoved into your hand (or being waved vaguely in the direction of an unattended pile of them) is no

substitute for enthusiasm. A disappointing show.

Having said that it was a pleasure to see just how many PCWs were there to be spotted among the top end PCs and CAD workstations. Locomotive were present and were actually taking orders for LocoFile and LocoScript 2 (apparently there are a still a few people who haven't upgraded yet). PCWs were in evidence on a surprising number of stands where many of them actually appeared to be working for their living, quite a sight among all those networked 386 machines which weren't. Perhaps it says something about the relative ease of getting a PCW up and running.

The Press suite (where old journalists go to rest weary legs) was actually located in the exhibition next door. It proved to be Camping and Caravans, leading us to wonder just how many executives took the day off to attend the computer show but actually went next door.



"IT'S THE MOST REALISTIC SIMULATOR HE'S GOT"

Learn to love it.

The official Amstrad user club in combination with Sumlock Business Services and Headline Training Developers are planning various training schemes.

The schemes will run from 'Learning Centres' around the country which will be taught by 'qualified and experienced professionals'. The courses will run for either a full or half day's duration and will be followed up with home-study packs.

The plan is to make all of the centres homogeneous and each of the courses as similar as possible in order to provide a sound quality of service. It also appears that the PCW user should be well provided for with training in both use of the hardware and in how to get the best out of software. Subjects covered will include LocoScript, SuperCalc and the ubiquitous dBaseII among others. For more information phone 091 510 8787

Remember to Brush Regularly

If you've bought a new RS 232 serial/parallel interface to talk to the rest of the world (see New Serial Hits the Screen) and found that it didn't work it could be no more than a lack of cleanliness.



At the back of the PCW machine are the board connectors onto which the various add-on devices available to the PCW owner, interfaces and joysticks for example, have to fit.

These connectors would be gold coated on more expensive machines but on the PCW they are

New Serial Hits the Screen

Well the back of your PCW actually. We know that your PCW can do a great many things, other than word processing, when pushed. It plays chess, it does accounts, it does the pools but can it talk to other machines, printers and electronic mail systems? The PCW is far from being aloof and in order for it to fulfill one of its many vocations it needs an RS232 interface plugged in to its rear.

There are already a number of RS232 interfaces on the market, (small boxes that connect to the back of your machine) such as the SCA Serial/Parallel complete with real time clock and the original Amstrad CPC8256, both of which do sterling work. Now these are to be joined by two products from Nottingham based Micro Control Systems.

MCS are producing two interfaces; the dual Serial/Parallel, which will allow you to access electronic mail and carry out data transfer between computers among other things and the Parallel only which simply allows a different printer to be connected. MCS believe this is a unique product.

Both products come with a two year warranty and the parallel only interface comes with a free centronics cable. For more information you can contact MCS on 0602-391-204.



New dBASE for PCW

Last month we mentioned the fact that dBaseII from Ashton Tate might not be the easiest package in the world to lay hands on, especially if you wish to run it on the PCW. This month it seems that things have changed. Although Xitan Software and Ashton Tate remain in conference as far as the approved dealership is concerned it appears that a PCW version is available, at the £99 price quoted, from Language Services (0843 69847). They also provide various tailored dBase applications.

Even better news is that a brand new version which has been specifically designed for the PCW is currently undergoing the awful rigours of Ashton Tate's quality control (where it is hoped that Ashton Tate will rename it Dbase II). After the recent excitements during which First Software and Ashton Tate parted company as distributor and supplier it is hoped that serenity and sense will win through.

dBase II is a pretty powerful tool to have at your disposal. Hopefully as soon as the new package clears quality control we'll be in a position to give it the once over and relay everything you need to know about it.

tin coated, which isn't quite so effective. After lengthy exposure to the air they can become oxidised, which results in an insulating layer of tin oxide forming on them.

A company called Gunson Ltd have come up with a remarkably handy little instrument for dealing with just such problems. It's called Speed Plate and from the look of the sparkly board connectors which now adorn the 8000 Plus office it certainly seems to be able for the job.

Speed Plate, a glass fibre brush held in a kind of retractable pencil, should be on sale from Halfords at £3.34 a shot with re-fills at £2.99 a packet of ten. Tel 01 555 7421

Read all about it

If you have news of interest to PCW owners don't keep it to yourself, tell everybody. We don't only want to hear about those things that make the Guardian, we want to hear about those things that affect PCW people; the big things and the little things, the software and the hardware, the personal and the poignant, the (all right, that's quite enough of

The Absolute Limit

Dave Smith who has spent his spare time since July 1987 recovering data from the corrupted discs of PCW owners (roughly 500 to date) has decided, subject to the approval of the Registrar of Companies, to form a limited Company - Dave's Disk Doctor Service Ltd.

This move is being made to cover the question of legal liability and allow for the maintenance and purchase of vital equipment. Dave will continue in full-time employment while working part-time for D.D.D.S. Ltd. All profits from the company will be re-directed via a Covenant to the Charities Aid Foundation.

So if you have any 3" discs which are more corrupt than a South American finance ministry and you wish to make use of Dave Smith's service please phone him first, in order to ascertain the current work load, and then have at the ready the following: the damaged disc, a spare blank, formatted, verified disc and return postage all in a "jiffy bag". You will be invoiced on return of your disc (and data). Dave Smith may be contacted on 089-283-5974.

BUY YOUR AMSTRAD FROM SBS AND GET A 12 MONTH SERVICE CONTRACT ABSOLUTELY FREE!

AMSTRAD PCW RANGE

PCW8256 single drive, 256K memory, Monitor, keyboard, printer £399.00
PCW8512 double drive, 512K memory, monitor, keyboard, printer £449.00
PCW9512 single drive, 512K memory, monitor, keyboard, printer £499.00

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Designed specifically for your Amstrad PCW printer, provides space for up to 500 sheets of continuous paper, keyboard storage or other items.



PCW8256/8512 Wire Printer Stand £8.65



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3" disks suitable for use with Amstrad CPC6128, PCW8256, PCW8512 (A and B drives), PCW9512 and all other computers with 3" disk drives. Our disks are certified 100% error free and come with a lifetime guarantee.

Amsoft CF2 3" Diskettes Price per 10 disks £22.95

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For PCW8256/8512/9512 & CPC
Small disk box (59273) holds 25 x 3" uncased disks (15 cased).
Large disk box (59171) is lockable and holds 50 x 3" uncased disks (30 cased).



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Dial-a-disk box £7.95

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- Cleanprint cassette will
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Cleanprint Kit PCW8256/8512 £14.74
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PCW9512 Carbon Black £3.24
PCW9512 Fabric Black £3.15

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PCW8256/8512/LQ3500 Fabric Black £5.21
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LocoFile PCW8256/8512 £26.04
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24 Pin Printer Drivers Disk £21.70

PCW TRAVELLING CASE



PCW8256/8512
De Luxe Travelling Case £39.95

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Courses consist of two audio cassette tapes, software disk and user instructions.

Complete Introduction to PCW9512/LocoScript 2 £29.95
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SuperCalc 2 on the PCW £29.95
dBASE II on the PCW £29.95

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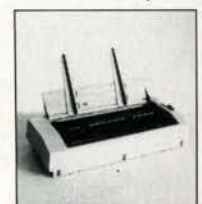
Suitable for AMSTRAD
PCW9512, DMP2000/3160
DMP 4000, LQ3500/5000di
and most other PC printers.



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For PCW8256/8512 printers.



Margin Maker £9.13

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At least 80% noise reduction
Optional Stand for 80 column Hood provides storage for paper.



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..... £4.95

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..... £3.95

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Handbooks for writers have traditionally been full of dire warnings about the dangers of vanity publishing – the arrangement where an author, desperate to see their name in print, pays a large sum to a 'publisher' who prints and binds up a limited number of copies of a book which normally ends its life back in the author's front room.

In the past, the advice has always been: if a book's good enough to be published, then sooner or later a publisher will come forward to take it on. And if it isn't... well, pop the manuscript in the bottom drawer, and better luck next time.

But increasingly writers are beginning to consider another alternative – self-publishing. It doesn't cost an enormous amount to pay for the printing of a book, so why not cut out the publisher altogether, and take your book through all the processes, starting with 'C for Create Document' and ending up with the reader?

Vanity Fare

One alternative to self-publishing would be vanity publishing. This is where, having had your book rejected by a number of publishers, you pay to have someone print it up and deliver it to the destination of your choice. If the book is aimed at a general audience and no publisher is willing to pay for its production, then the chances are it's not good enough anyway. It's unlikely to succeed regardless of who is publishing it. Vanity publishing is so called because it will only satisfy vanity instead of appealing to commercial sense.

There are definite advantages to self-publishing. You retain full editorial control – so that there's no danger of ending up with a ghastly front cover or cringe-making blurb, foisted on you by some junior publisher's assistant. You're likely to have more commitment to the successful marketing of your book than even the most supportive publisher will be able to offer. And, finally, publishing can be creative, too – and fun.

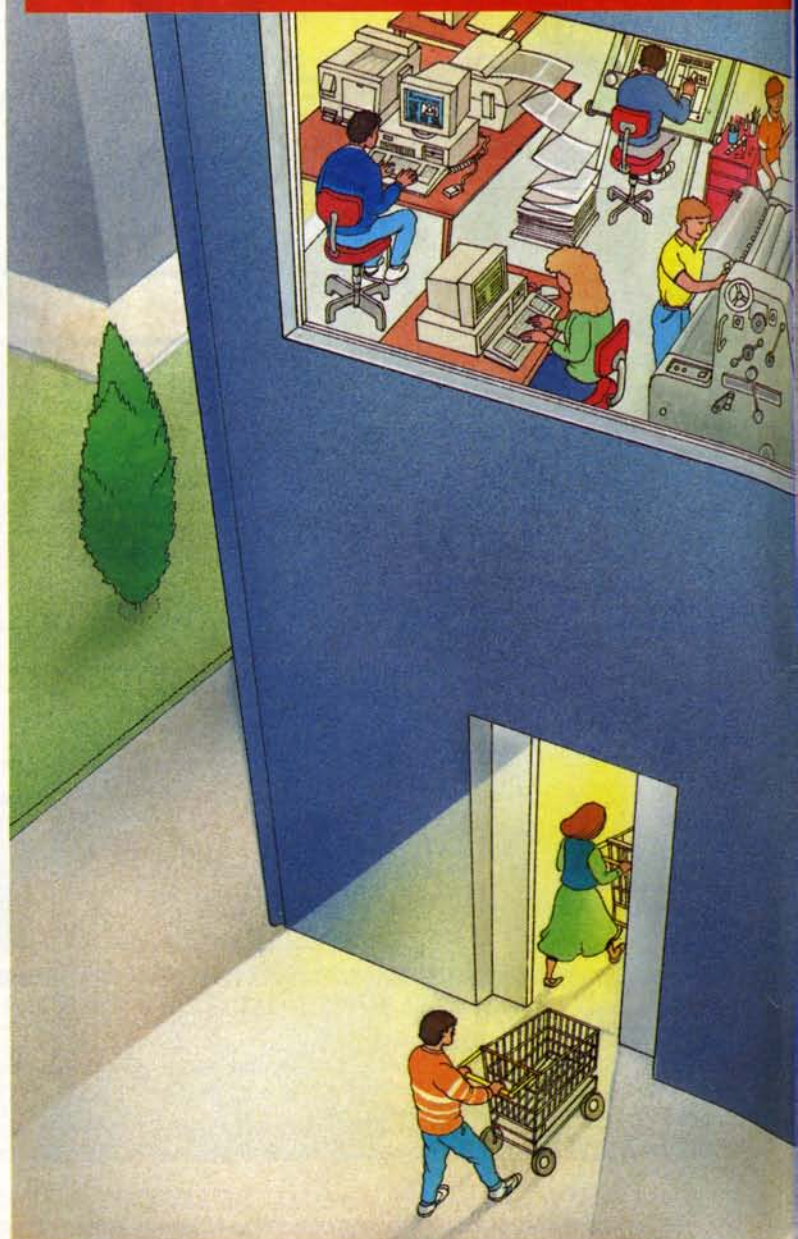
Against this, there are some pretty major disadvantages. Firstly, publishing is a very different skill from writing, and to be able to succeed you'll need a good grasp of how the publishing and bookselling industry works. You wouldn't expect your driving instructor to be a good motor mechanic; and you certainly wouldn't expect your high street shoe-shop to cure the leather, produce the last, and manufacture each shoe it sells. People, and businesses, specialise, because only in that way can they hope to become competent at what they do. If you're good at writing, why not leave publishing to somebody else?

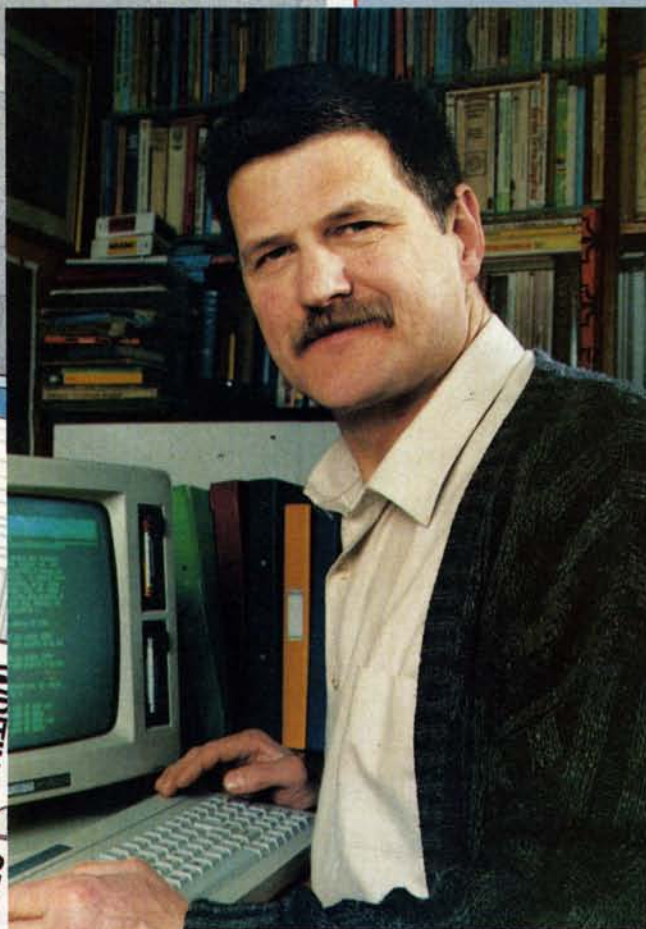
The tendency in the last few years has been for massive mergers and takeovers in British publishing, but nevertheless there is still space for the small independent company, and many new publishers do manage to squeeze into the market. However, unless you actually want to develop a business as a fully fledged publisher – rather than a self-publisher – it's hard to see how it will be worth your while to try to match the promotion and distribution experience of the professionals, if your title is to be sold nationally through the usual book-selling channels.

That 'if' in the previous sentence is perhaps the key word: because there are books written for particular specialist markets, where the national muscle of a

DIY Publishing

Does your responsibility for your book control over it – have to stop when you writing it? Andrew Bibby publishes the





Mike Keys is a computer consultant and software developer, who admits that he started from square one when he decided to self-publish a book on Amstrad PCW machine code programming.

Mike says he discovered computers relatively late, and first got hooked on an old Sinclair Spectrum that had been bought as a Christmas present for a nephew. A book on machine code routines for the Spectrum set him off on a journey of exploration into the inner secrets of computers, and when he found that nobody had done a book on the PCW's machine code, he decided to remedy the gap himself. [PCW Machine Code*] is an 172 page book, written in a remarkably readable style, which takes the reader into some of the more arcane mysteries of the PCW's Z80 processor.

"The ultimate test of any book is the financial one", he says. "You may feel that you're not profit orientated, and that you'll be happy to get your words into print merely for the good of the computing public. But that's unrealistic, unless you're very comfortably off indeed."

In fact, Mike reckons that, in total, he has spent over 2000 hours on writing the book, arranging for its publication, and dealing with sales. He'd originally hoped to make about £2500 – which as he points out would have been a very poor rate of pay for the time put in. However, despite positive review in the computer press and a lot of satisfied customers, the economics didn't work out the way he'd planned. "Through extreme

persistence and doing absolutely everything myself, I eventually got my production costs down to about £3 each, for a print run of 500. I concluded, wrongly, that I couldn't lose if I charged about £8 a copy. What I hadn't reckoned on was the need to advertise."

In fact, the final price had to be fixed at £15. Three times he decided to scrap his plans, at one stage even returning some advance orders which had come in. In the end he persevered, encouraged when one would-be customer offered to send him £15 just for his original notes.

Mike admits that he has still not found cost-effective ways of reaching potential customers. But his first problem was finding a suitable printer.

"There are vast numbers of back-street printers, and a lot of them are very unreliable. You need endless patience. I found what I thought was the best proposition, a medium-sized printer who was very enthusiastic and very business-like. But the quote was for £2500, and I wasn't prepared to risk losing that amount if the book didn't sell."

An additional problem was that he hadn't chosen a standard page size for the book: this too pushed up the costs. In the end, he went to a local printer. "The typesetting costs would have been crippling" – so he simply printed out the text straight from LocoScript on the PCW dot-matrix printer; and he also did all the pasting-up himself.

Binding was another difficulty, and at one stage he thought the book would have to be stapled together, with tape over the raw edges. In the end, he decided to arrange for the book to be ring-bound. This is a sensible arrangement for a computer manual, but could be a problem were the book to depend on bookshop sales for its success: booksellers like their stock to have proper spines.

Was it all worthwhile? Perhaps not financially, but Mike is not daunted. "I enjoyed it. People have written me lots of appreciative letters, and I've learned lots of new skills. Now I've got plans for future publishing projects..."

PCW Machine Code by Michael Keys; published by M Keys, Spa Associates, Spa Croft, Clifford Rd. Boston Spa, LS23 6DB. £15 incl postage

ng

– and
finish
facts.

WRITING

GRAPHICS

PROOFING

TYPESETTING

PRINTING

DISTRIBUTION

MARKETING





"Self-publishing is really quite easy and quite cheap, but it's important to end up with a respectable product", says Tim Lewis, whose book about the people of Coventry, *Coventry Voices*, was published last year and has already met with considerable local success.

"There's a mystique about publishing, which it's really very easy to break down", he argues. "About five years ago I gave up teaching to write full time, and shortly afterwards I decided to set up my own publishing house, to produce low-cost, short-run books, mainly of local interest. I produced some books, and got to know the ins and outs of publishing – covers, layouts, printing, bindings, dealing with designers, and so on."

Coventry Voices, however, has been his most ambitious undertaking. It's a 256 page hardback book, based on a number of interviews which Tim carried out with Coventry people – young and old, white and black – but which Tim has worked into a more literary account of ordinary city life today, warts and all. Coventry Voices has been distributed by Tim himself to all the major bookshops in the west Midlands area. In nine months, about 400-500 copies have been sold.

"I got £1000 from the City Council towards the cost of publication, and West Midlands Arts had also supported the research part of the work, so there was backing, and people who'd approved it", he says. However, he needed about another £3000 from his own resources to cover all the costs: £1000 was raised through a bank overdraft.

"Originally the book was going to be a paperback, with a 5000 print run. But then we felt that we probably wouldn't sell 5000, but that we could sell

1000. At that level, a hardback is not very much more expensive to produce than a paperback.

"I wanted photographs, and thought about having a photo section in the middle of the book. But it's better to integrate the photographs. That requires heavier, glossier paper for the book, and so we went for quality. There are about 30 photos: I took all of them myself, and developed and printed them. I also did the cover. The cover design was very simple, in two colours, and with three photographs. I used letaset for the titles – and of course I had to write the blurb inside the cover and the autobiographical details."

Tim decided to work with the Self-Publishing Association Ltd, a Midlands based group, who used an Apple Macintosh and a laser printer to produce the typeset copy. "But you can just phone up local printers, and tell them you want to get a book done. Printers will go through everything, and should have samples and examples of their work."

Despite the hard work, especially in distribution, Tim is satisfied with the success of his venture. "There's a real sense of achievement", he says.

Coventry Voices, by Tim Lewis, published by Red House Publications in association with SPA. 23 John Tofts House, Leicester Row, Coventry CV1 4AL. £12.95*1]

commercial publisher won't help and could even hinder the book's success, and where self-publishing can be the best answer.

An historical perspective

For example local history books, if done properly, can quite easily sell a couple of thousand copies just in the area they describe – enough to leave the publisher with a modest profit in the bank. National marketing or distribution in these circumstances would be a luxury – instead ways have to be found to promote and sell the book locally, perhaps through booksellers and newsagents but perhaps also in less traditional ways, such as through community organisations and clubs.

Self-publishing can also be appropriate for books which are specialist in a different sense, appealing to people with a particular shared interest, who can be reached through a few well-placed classified ads or mail-shots. Whether your interest is in Northumbrian bagpipes, Isle of Man stamps or varieties of rose, there is likely to be a pool of fellow-enthusiasts who will welcome the chance to buy a book on the subject.

And finally it's also possible to go it alone successfully with a book of more general appeal, although you may have to reach the public in ways that by-pass the traditional book-selling routes. Travel writer Richard Binns self-published his book *French Leave*, a well-researched guide to the regions, hotels and food and drink of France. Conventional wisdom might say that he would have been better advised to find a commercial publisher to take his manuscript. Nevertheless, he chose the self-publishing route, and found he

had a best-seller on his hands. Perhaps it's significant, however, that although he used the book trade, he also arranged deals direct with ferry companies, villa holiday companies and other organisations who used his book as promotional gifts.

Someday my prints will come

These are marketing and distribution questions, which need to be considered, but perhaps not quite yet. Let's concentrate on an earlier stage of the publishing process – the actual printing of your book.

Finding a printer can be difficult: look in the yellow pages, and you'll see just what a wide choice you have. Not only that, but printers, like computer people, have their own vocabulary and jargon which can be offputting to those of us

Can I quote you on that?

You should expect to get an itemised quotation from a printer, and of course you'll be well advised to arrange to get several quotes, in order to compare prices. Depending on what you've requested, these are likely to look something like this. (The actual figures given are here to give you a very rough idea of what to expect – but don't rely on them!)

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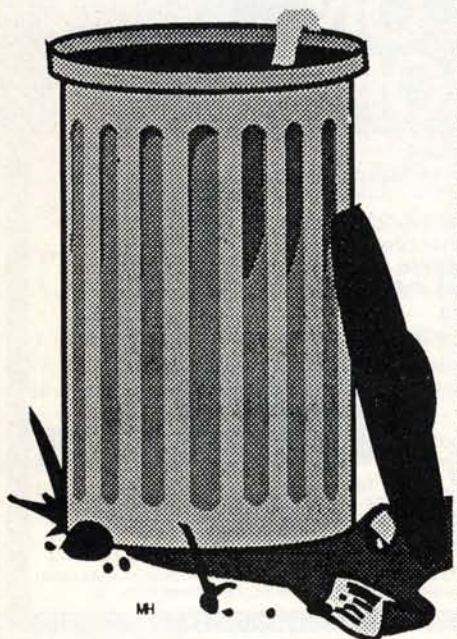
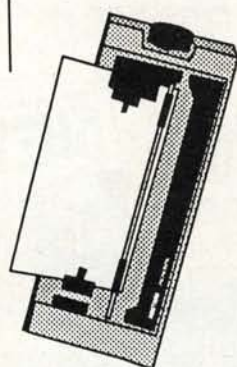
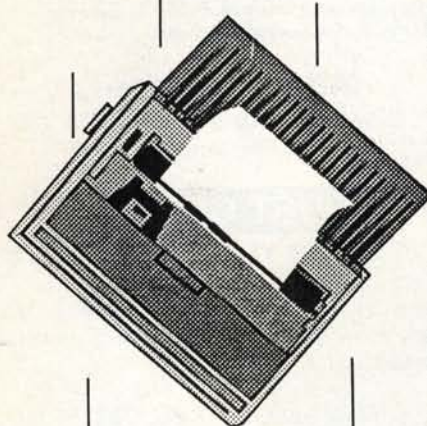
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However, what you'll be looking for is a printer who has the equipment and expertise necessary to handle the production of a book, and this will rule out a lot of the very small jobbing printers and High Street quick-print centres. On the other hand, you won't get a very competitive quote from a very large printing company, who will be dealing with much larger print-runs or, say, with full-colour newspaper printing. The printer you choose may sub-contract parts of the process to other companies – for example, quite often the finishing (binding etc) is done by specialist firms – but you'll want to ensure that most of the work can be undertaken in-house.

Probably the best way of finding the names of likely printers is to visit your local bookshop or library, and note down who has printed books similar to the one you've got in mind. Alternatively, you might consider asking the advice of the Literature Officer of your regional arts association.

Getting bound up in it

In the past, perfect bound books sometimes had a tendency to fall apart. The latest developments in glue technology should have put paid to this problem, but ask to see examples of the printer's (or binder's) work, just to make sure! Hard-backs are almost always 'case-bound': if you examine closely the spine of a hard-back, you'll have some idea of what this process involves.

The printer will also need to know what paper you want to use, and will be able to show you examples of what they have in stock or will be able to obtain. Generally speaking, the cost depends on the thickness of the paper (measured in grams per square metre (gsm), and on its quality: art-paper, which is surface coated and best for reproducing photographs, is inevitably more expensive (8000 Plus for example is printed on 80 gsm Beghin blade paper – only the best will do for our readers! Ordinary writing or typing paper might be 70gsm or 80 gsm but without any special finishes.

You will also be charged more for photographs. Photos can only be reproduced if they are screened (that is, the photo is turned into a very large number of small dots, to allow graduations of grey to be reproduced). Screened photographs are called half-tones, and you will normally be charged for each one separately – at perhaps £5-£10 each.

Ready, Get set, go

Perhaps we should have dealt with typesetting and design first – because as you will gather, this is a preliminary stage which you have to tackle before you even reach the the printing stage of your book.

Steve Patient explained in February's 8000 Plus (issue 29) that it's now possible to typeset direct from your LocoScripted disc – though if you read his article you'll also

Bookmaking made simple

Your book may end up, say, about A5 in size, but it won't be printed on an A5 press: it's more likely to be run on an A2 or larger press, and then folded and guillotined to size. This means that you need to think in terms of multiples of 16 or 32 page units when planning the book: a 162 page book is likely to cost about as much as a 176 page book, because it'll use the same amount (eleven sheets) of A2 paper.

Let's say you calculate that your book will be 176 pages long. That's one thing decided. But printers will need to know several other things, before they can give you a sensible quote. How do you want it bound, for example? Paperbacks are usually 'perfect bound', which means that the pages are glued at the spine to each other, and to the book's cover.

be aware that the technology is still young, and the process isn't entirely hassle-free. Alternatively, you can arrange for your text to be keyed in, to a photo-typesetting machine. Your printer may quote you for this work, but is likely to sub-contract it: so it can be cheaper to shop around and find your own typesetter.

Typesetting may average about £4-£5 per 1000 characters (ie letters or spaces), though most typesetters want to see the job first before quoting: if your text is difficult to read, or full of scientific formulae or foreign words, you'll be charged more. Typesetters may prefer to quote an hourly rate (£35-£36 an hour might be comparable to £4 per 1000 characters). Either way, if you work out how many characters even a short book is likely to have, you'll see that typesetting is not cheap. Tolstoy would have thought twice about War and Peace if he'd had to pay to have it typeset.

The typeset copy will be returned to you normally on long 'galley proofs', which you then have to turn into the finished art work for each page. It's possible to equip yourself with a board (or preferably a light-box), some Cow Gum (or aerosol adhesive) and do your own paste-up: or you can get a graphic designer to do this for you.

You may feel confident about doing your own cover. But bear in mind that a striking cover is an essential marketing tool for your book, particularly if you're planning to sell in the bookshops. If you decide to commission a good local designer to come up with a full-colour cover, you should budget on spending at least £250-£300. Settle for something less ambitious, and you'll still probably be charged about £100. Find a friendly art-student at the local poly, and you may save a bit more.

In other words, there's a lot to think about, just on the technical side of bringing out a book. It's quite feasible, but it's best to be realistic about the work involved before you start. And in some ways the really difficult bit of self-publishing comes later, at the distribution stage. That's what we're looking at next month. ■

Fact or Fiction?

A legitimate publisher will probably reject 999 manuscripts out of the 1000 that he receives. Of all the fiction that is published, nine books out of ten won't yield any profit to him; The break-even point for hardback sales is something like 3000. Non-fiction books are likely to be much more successful for the publisher than fiction: most people will go to a library to read about the exploits of Huckleberry Finn whereas gardening or fly fishing manuals are far more likely to become permanent additions to the home bookshelf.

Let me count the ways

What sort of books lend themselves to self publication? As already discussed works of local history might have too limited an appeal to interest a national publisher while still being capable of generating enough sales to be profitable.

Other ideas might include genealogical works aimed at a particular family. There is currently an enormous amount of interest in origins and while no publisher could commit himself to tracking down customers who might be spread out all over the world a self publisher could earn a steady living at it.

Another idea might be to offer to write biographies of local businessmen (or anyone else with the money to spend on a vain whim) for distribution to their friends and family.

Commissioned works in general, for individuals, companies, local authorities or special interest groups are an obvious

possibility for the self publisher. Again, the first step has to be finding a group with both money and an urge to preserve their history or promulgate their ideas. In fact both of the forgoing ideas are currently earning money for their originators.

Books produced for any specialist group, rather than having broad appeal - poetry, works of illustration, tables and guides - have all been published by their authors.

Probably the best way of deciding whether or not you should consider self publishing is to sit down and think who might actually buy it. If you can put likely buyers into a specific category then you might have the right product. If you find it hard to imagine anyone who might buy it other than your mother then put the manuscript back under the bed.

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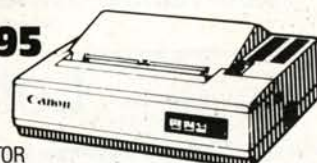
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SM2400

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As with almost all electronic equipment the cost of modems is falling while the range of features being offered steadily increases.

The most dramatic price reduction has been among the fast 'intelligent' modems. Even as recently as the middle of 1988 a modem offering the features provided by the SM2400 would have cost three times as much.

The modem is a slim box about 3cm by 52cm by 17cm which will fit nicely under your telephone leaving little to see but the Amstrad logo and a plethora of little red lights on the front.

Amstrad's first modem offerings were add in boards for their PC range which offered unheard of value for money and took PC comms enthusiasts up to 1200/1200 baud as the standard speed of transmission. There are now few PC users who would be content to continue working at 300/300 baud. With their new stand-alone modem Amstrad clearly hope to repeat this early success across a whole range of computers.

On the line

The SM2400 comes in a rather large box complete with power supply, manual and ribbon cables suitable for connecting to a standard RS232 interface (and if you think that's a tautology you haven't seen the book which lists all the different ways various manufacturers have implemented this standard interface).

Connecting the SM2400 to the PCW is simply a matter of plugging the ribbon cable into the serial port of the RS232 interface (you have to have one of these to use any modem). The power supply unit comes with a jack plug type connector on one end for the modem but does need a mains plug fitting to the other end; why manufacturers can't fit these when the three-pin plug with square pins is virtually universal now remains a complete mystery.

There is no on/off switch on the modem itself, just one of the lights marked ON which tells you the power is connected. The lights are important as together with the built in speaker they provide a way for the modem to tell you what is happening during a call.

One minor irritation is that the speaker volume can't be altered. At night, when there's not much noise, it can sound disturbingly loud. In a busy office, though, during the day,

All PCW owners would no doubt agree Amstrad have gained an enviable, and deserved, reputation offering value for money in the consumer electronics field, especially with computers.

As a result of their success with computers Amstrad have recently expanded their product range with the addition of computer peripherals. One of their most recent offerings is designed to help you get the most out of almost any computer.

with the printer going, you can hardly hear it at all.

We tested the SM2400 with three different pieces of comms software; two public domain programs and a commercial package. As expected there were no problems with any of them at any of the speeds supported.

As far as reliability is concerned the modem performed faultlessly. It's been in use in the 8000 Plus office for several weeks and remained plugged in continuously. It does get a bit warm but there is a large heat sink on the board to help dissipate that. Considering the heat generated it seems best not to risk blocking the vents cut into the side of the unit.

Amstrad aren't bundling any software with this modem, which is understandable since they are hoping to sell it to owners of a wide range of machine, but it would have been nice to have seen some kind of a software offer; after all, a modem can't be used on its own, you have to have software. Despite this, the SM2400 has to be considered extremely good value and it will be interesting to see how other manufacturers react to it.

Hayes who?

The Hayes command set is named after one of the companies to first produce an intelligent modem. The AT that precedes every command stands for ATtention.

SM2400

PLUSES

- ▲ All speeds up to V22bis (2400/2400).
- ▲ Hayes AT command set.
- ▲ Excellent documentation with index.
- ▲ Comes with all necessary cables.
- ▲ Built in speaker.
- ▲ Through connection of telephone.

MINUSES

- ▼ No bundled software
- ▼ No speaker volume control

Hacker's haunt

The Hayes command set is basically a way of telling the modem to perform a particular function. There are more than twenty basic commands ranging from ATZ - which resets the modem to its default state - to ATSr=n, which sets the register (value r) to a value represented by n. How much use you can

make of these commands rather depends on the kind of communications software you're using; for example, not all software allows you to read commands in from a file, a facility which is absolutely vital if you intend to get the most from the flexibility provided by the Hayes AT command set.



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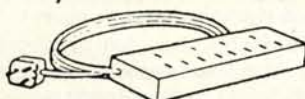
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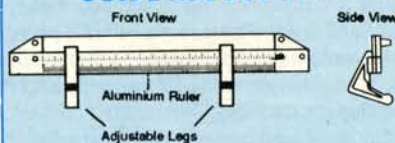


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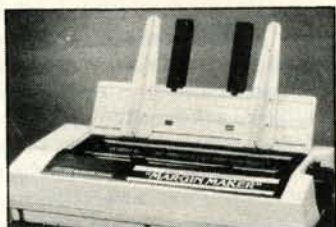
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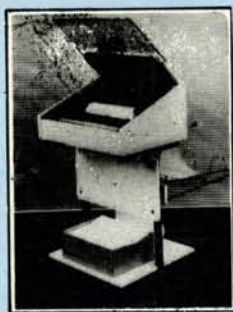
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PLESIOSAUR

Dr Michael Taylor from the Leicestershire museums explains how

Back in 1987, a friend leaving for the USA very kindly gave me his 8256 at a time when I suddenly had space (a house of my own) and time (finishing my spare-time Museums Diploma). At last I could complete publication of my DPhil research thesis on 'Studies on Plesiosaurs from the Jurassic of Britain.'

Graphic failing

As far as I'm concerned, the quality of printout from DTP and graphics software on the PCW doesn't justify their cost. When producing lecture materials, I enlarge LocoScript 2 printout on the photocopier and paste it up onto plain A4 paper with hand-drawn or photocopied figures. I then photograph this montage on a copy stand for 35mm slides, or just photocopy them onto overhead transparency sheets. I wouldn't ever use the dot matrix printer for producing published art work.

Many of my friends in museums, universities and nature conservations simply use the PCW as a word processor for their research and publication on such things as Iguanodon dinosaurs or 19th century dress. Some have nevertheless modified their machines to suit their special needs. My own machine has a couple of special tricks which will interest many researchers: PC-compatibility and the bibliographic database, Paperbase.

Plesiosaurs, by the way, are the funny fossil marine reptiles with long necks and four flippers whose pictures you see in all the gift shops around Loch Ness. In fact the only real plesiosaur up there (apart from a few fossils in the rocks Cromarty and Elgin way) was a fossilized thighbone from Peterborough which a lecturer had left behind after

demonstrating what Nessie should look like.

Plesiosaurs, real ones that is, were excellent animals from a young scientist's point of view as there was plenty of scope for modern research on their biology. After four years of graduate study, I had a very fat thesis consisting mostly of a detailed description of the head of one fossil from near Whitby, together with discussions of the muscles, bone structures, static and dynamic forces, and how the animal fed, saw, heard and smelt. This came to a lot of paper to revise and retype into the correct format for formal publication in academic journals such as the Zoological Journal of the Linnean Society.

Boning up

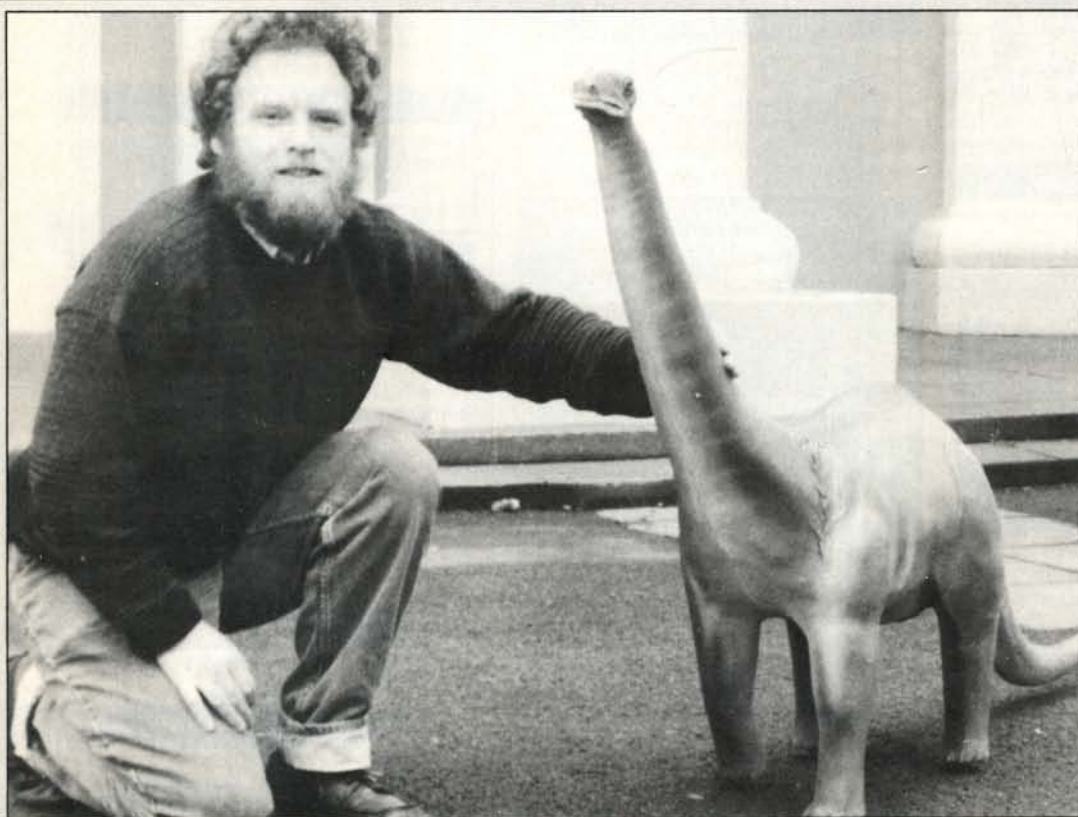
I am now a museum curator at the Leicestershire Museums and one of several people there with PCWs. However, we don't use micros for routine typing and our collections are far too large for the data to fit on anything other than the Sperry mainframe at County Hall.

However, we don't just lurk behind the scenes waiting for people to come in. We actively research and prepare lectures, publications and exhibitions. This involves repeated drafting and redrafting, for which we can use the mainframe

or the museum's own PCW 8512, which I prefer as I can take my work home and back.

I'm an honorary member of staff and give several lectures and practical classes in the University's Department of Geology. My colleague Arthur Cruickshank and I deliver one-day courses in various aspects of fossil vertebrates to nearby universities' extramural departments. I also give occasional lectures to specialist meetings. All these demand the preparation of handouts, reading lists and audiovisual material. I also write in my spare time for publications ranging from Nature and New Scientist to Early Times and the Guardian.

I maintain the database of the Geological Curators' Group which holds information on all UK museums and other collections of geological material. The group's secretary, Simon Knell and I, have recently completed a book, Geology and the Local Museum, published by HMSO.



Dr Michael Taylor, curator of the Leicestershire Museums, is perfectly at home among its older residents; 'The PCWs - both here and at home - are absolutely vital for all the work we have to get through here. Having the two of them available makes much of our work easily transportable.'

S AND PCWS

his PCW crossed the dark divide between past and present

It's all about how you can make the best use of a geological collection even if you know nothing about geology; he finally got round to buying a PCW on the very day I finished typing in the last word of the text! Our discs continue to fly backwards and forwards in the post on other projects.

Ambiguous reptiles

The PCW is crucial for all this work, much of which is done in my spare time. Revision is easier and errors no longer creep in (especially in reference lists). As far as word processing is concerned, I use both LocoScript 2 and Protext. Protext's speed and elegance are perfect for longer papers, with its rapid hopping and searching through text. LocoScript 2 is slow, but much better for shorter documents which are easily organized at the Disc Management Screen.

I also find it indispensable for the algebra and special symbols like Greek and Cyrillic when I'm mathematically modelling buoyancy in a diving reptile or citing Russian articles.

The ability to print one document while editing another is essential for anyone like me who often produces long articles and reports. I break such things up into chapters so I can edit one while printing another. This rules out LocoScript 1 and Pocket Protext.

Protext scores in allowing you to find or replace text including printer control characters - replacing a word with the same word underlined, for example. This is a godsend when faced with a script converted from ASCII which is full of words such as 'plesiosaurus' which all have to be underlined.

Printosaurus

I use the PCW's Basic for working out such things as diving depths and buoyancy for various hypothetical marine reptiles. I seem to be unusual in using Wight Scientific's Paperbase, a bibliographic database which has not had the attention it deserves from PCW magazines. The program is now almost perfect; anyone using a PCW for research should look at it.

It's basically a database which you use for entering and searching through details of publications such as books and journal articles. You can also make use of a reasonable number of keywords. Paperbase is especially useful for earmarking articles for use in future projects, by which time I have always forgotten half the articles I meant to use.

It is useful to be able to load text and Paperbase data files from my home PCW into the PC at work. There's a wonderful feeling of security in having the same database on two different kinds of machine, preventing anxiety concerning the possibility of breakdown or obsolescence! It's also handy to be able to send articles to publishers on disc as well as on paper, and many more publishers seem to use PC-type discs than can use PCW discs. There was also the case of a museum in the south which recently wanted my written advice on buying a fossil reptile 36 hours after I had seen the reptile!

Compatibility problematicus

There are two potential problems in making a PCW PC-compatible.

The PCW drive B uses 80 tracks whereas the PC uses 40, which is in fact no problem as the Peartree drive can be switched between these. On 80 tracks it behaves exactly as a normal drive, except for the different size of discs. The Xeno software converts data and text files from a CP/M disc in drive A to PC-DOS format discs in drive B switched to 40 tracks, and vice versa. My only problem has been to remember to switch from 80 to 40 and back again.

More intractably, text from the PCW may have to be converted to ASCII before a PC

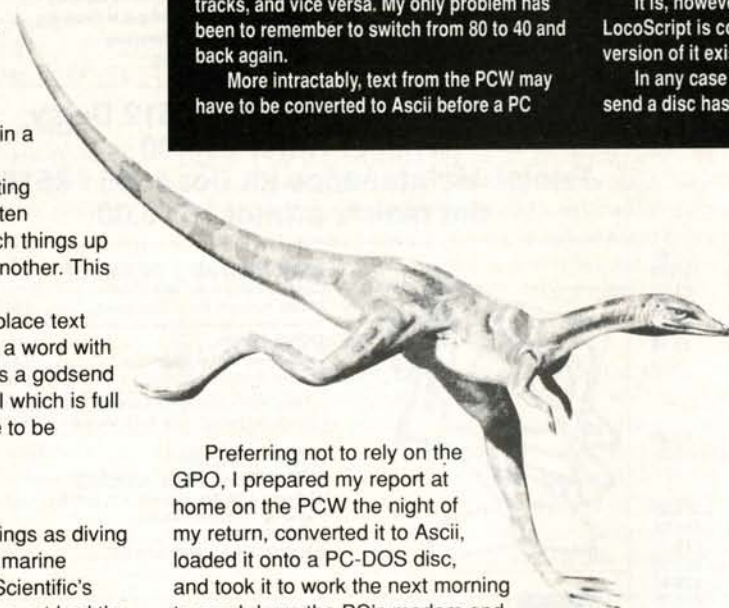
word processor will accept it and vice versa.

This infuriatingly wipes 'special' symbols and control commands such as underlining.

It also destroys accents and foreign characters which can prove invaluable when discussing the work of foreign palaeontologists. This problem thankfully does not occur with Protext which will take files straight from the other machine's Protext.

It is, however, unavoidable as far as LocoScript is concerned because no PC-DOS version of it exists.

In any case not everyone to whom you send a disc has the 'correct' word processor.



Picture © Natural History Museum

Preferring not to rely on the GPO, I prepared my report at home on the PCW the night of my return, converted it to ASCII, loaded it onto a PC-DOS disc, and took it to work the next morning to send down the PC's modem and telephone line to the other museum's PCW.

For these reasons, when adding a second drive to my 8256, I made it PC compatible by choosing a Peartree 5.25" drive B and Xeno format conversion software.

Like most of my friends who do research of any kind, I am only interested in computers which can be useful to me. The humble PCW is very nearly ideal and has an adequate range of software for our needs. The only problem is its lack of PC-compatibility, which does not worry those of us whose only output is on paper. In any case it is still much cheaper to add a 5.25" drive and memory chips to a PCW than to buy a PC with printer and software. I'm pleased that I took the time and effort (helped by 8000 Plus) to match my PCW to my own needs.

It may be luck but I have had very few disappointments and wasted very little money. I cannot see myself adding any further improvement until it falls to pieces and I can relace it with something more advanced, but equally workmanlike (and that doesn't look like happening in the near future). ■

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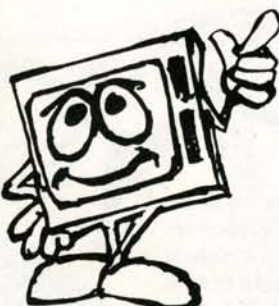
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An illustration of stack use

```

JMP      START

;
SETX: DB   'XXXXXXXXFROGXXXXXXXXXX'
SETZ: DB   'ZZZZZZZNEWTZZZZZZZZZ'
;

DS       0AH           ;ALLOW 5 LEVELS OF STACK
OURSP: DW 0            ;STACK GROWS DOWN FROM HERE
HISSP: DW 0            ;PUT OLD SP HERE
;
START: LXI H,0          ;LOAD HL WITH ZERO
      DAD SP            ;ADD OLD SP TO HL
      SHLD HISSP        ;SAVE OLD SP
      LXI SP,OURSP      ;SET NEW STACK TOP
      LXI H,14H         ;COUNT FOR BLOCK MOVE
      LXI B,SETX         ;ADDRESS OF BLOCK OF X'S
      LXI D,SETZ         ;ADDRESS OF BLOCK OF Z'S
;
LOOP: LDAX B             ;LOAD REG A WITH X
      PUSH PSW           ;PUT AF PAIR ON STACK
      LDAX D             ;LOAD REG A WITH Z
      STAX B             ;PUT Z WHERE X WAS
      POP PSW            ;GET X OFF OF STACK
      STAX D             ;PUT X WHERE Z WAS
      INX B              ;ADDRESS OF NEXT X
      INX D              ;ADDRESS OF NEXT Z
      DCX H              ;COUNTDOWN
      MOV A,H            ;PUT CONTENTS OF H IN A
      ORA L              ;OR L WITH A
      JNZ LOOP           ;IF HL ISN'T ZERO-ROUND AGAIN
      LHLD HISSP         ;GO BACK TO OLD STACK
      RST 6              ;RETURN TO SID
      END

```

If you're making heavy use of the stack then you can't rely on the one provided by CP/M, you need to provide your own. This isn't difficult as demonstrated by the memory block swapping routine above. Although the swap only involves using one level of stack more is provided to make the process clearer: all you are doing here is to reserve an area of memory and set the new stack top to the highest byte within it.

see if they work.

Right at the beginning of this routine you've put 20 X's and 20 Z's into contiguous areas of memory (all right, we know about the amphibians); the idea being that they are just test data for the routine. The aim is to swap all the X's for Z's and vice versa using just the internal Z80 registers and one level of stack; not too bad if space is tight.

In the next section – labelled START – you establish your own stack and space for the address of the original stack.

This is followed by the routine that actually sets the new stack to the active one and saves the old SP value. The last three instructions in this section set the count in HL, the address of the X's in BC and the address of the Z's in DE. Now you're ready for the actual routine.

It all adds down

The routine LOOP loads the first X into reg A and puts it onto the stack. Now the first Z is loaded into A and immediately saved to the location occupied by the first X. The next thing to do is retrieve the X from the stack using POP PSW and save it to the place the Z came from.

The values in the two register pairs BC and DE are incremented to point to the next X and Z and the counter reg pair HL are decremented before being checked to see if it's reached zero. If it has then the routine is finished, if not then it all happens again with the next two bytes in the sequence.

Once it is finished the old stack is restored using LHLD HISSP and control is handed over to SID. As everything is happening under SID you can use the dump facility to see if everything worked. Being able to do this kind of thing is what makes SID so useful.

There are a few things you probably think obvious about the stack but which should be mentioned anyway. Firstly, it is a LIFO, which stands for Last In First Out. This means that values must be removed from it in the reverse order from the way they were placed on it. If you're the sort who enjoys fancy work like retrieving values in a different order from the one intended, then while it can be done, you're piling up troubles for yourself.

Common fatal error #739

The second thing to watch for is putting on more values than you take off; this is all too easy to do when making jumps from called subroutines. What will happen is that the stack grows ever downward until it runs into your program. At this point things will go badly wrong, usually something strange will happen and then the machine locks up in an uninterruptible loop.

The reverse problem, that of taking off more values than there are can produce equally unwelcome effects. A common result of this is for the program to quit unexpectedly as it tries to do a RET and finds only the zeros that live at the bottom of the default stack. This results in a warm boot and back to the prompt; at least that's better than having the PCW lock up.

To sum up; the stack gives you the freedom to re-use registers by allowing you to save and retrieve their contents quickly and easily. Once you start using it you'll wonder how you ever managed without it. ■

The last bug

It can be useful to know what the error messages mean when using the MAC assembler. These are the letters that appear in front of rejected lines thrown up by MAC during an assembly. The Amstrad manual doesn't help much; so here they are with what they mean.

- B** Balance error: this usually means that a macro didn't have an ENDM statement after it but can mean a bad conditional assembly sequence.
- C** Comma error: a macro error meaning that you've lost a comma delimiter somewhere thus making

the parameters nonsense.

- D** Data error: an RMAC error this one. RMAC can't put the data in the specified data area.
- E** Expression error: your expression is ridiculous and MAC doesn't want to know about it.
- I** Invalid character: a control character other than carriage return, line feed, tab or end of file has been found. Are you using a LocoScript file perhaps?
- L** Label error: usually means you've used the same label twice. This one is very common since there are only so many meaningful six letter

words.

- M** Macro overflow: too many nested macros or infinite recursion. Macros can nest to any depth (until the macro table is full).
- N** Not implemented: means you've tried to use a feature found in RMAC but are actually using MAC; that was silly.
- O** Overflow: the expression is too complex for MAC to unravel, simplify it. Also occurs if there are more than 9999 LOCAL labels!
- P** Phase error: a bit subtle this one (means we don't really understand it) but moving any LIB files to the

beginning of the listing should cure it.

- R** Register error: the register in your listing isn't a register one really.
- S** Syntax error: you've written it wrong.
- U** Undefined symbol: MAC has found a label where no label should be. You've used one without defining it anywhere (a jump to a non-existent subroutine or loading a register pair with a location you've forgotten to define anywhere).
- V** Value error: this is a bad operand, or perhaps just misguided. Have you missed out a comma?

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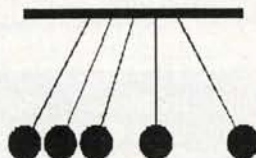
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THE SOFT BIT

Getting a grip on the right software can make comms a whole lot easier

Comms software should make the transmission of information over the telephone lines quick and simple, but like so much else in life there is an inevitable trade-off between utility and simplicity. The more a program allows you to do the more there is to learn before you can do it.

Something for nothing

Because those who use comms always find they want to do a bit more than their software will let them many enthusiasts have written their own. There are dozens in the public domain; the problem with many of them is that they need patching for specific machines. If you get them from clubs or user groups you will usually get a version already installed for your machine.

Software will allow you to actually get some use out of that very expensive modem you bought after reading the last issue. The modem communicates with another modem but you still need software for your computer to talk to your modem.

There are very few facilities you need to get started, and for some purposes a piece of software that is dedicated to a particular task can be the best choice. For example you may only be using your modem to download screens from Prestel and be uninterested in any other use of comms; nothing wrong with that but clearly you won't be needing the kind of sophisticated software necessary to try and hack your way into Cheltenham GCHQ.

Information can be sent down telephone lines encoded in a variety of different ways, but for all practical purposes there are three main methods. The most complex to understand but easiest to use are the viewdata systems, of which the best known is Prestel. Under the viewdata system information is transmitted a page at a time.

From the PCW's point of view the trouble with Viewdata is that none of the characters it is

receiving make any sense. Viewdata characters have *attributes* and can be either text or graphics both of which can be coloured and flashing if need be. The PCW (like most machines apart from the BBC) can't interpret these codes itself.

To use Viewdata your software must have *Viewdata emulation* which simply means that it can make the PCW behave as if it has a screen 40 characters wide and 25 deep. Prestel, the most popular Viewdata service, is actually in colour but no emulation on the PCW can be that good. Screens are selected by number from a menu and some commercial users have nothing but a numeric keypad attached to their modem.

```

SERVICE DEFINITION
Service Name:      Telecom Gold PSS 300/300
Telephone Number:  92 216411
Speed:             = 300
Format:            = 7 Even
Emulation:         = ITY
Protocol:          = NONE
Logon Sequence:    *****1M1MA21MNLGOLD901TYM1M"A21920100
                  4841MID TXT1521M
  
```

OK SAVE DELETE EXIT

The Dialup's set-up screen which allows you to add a service to the menu. Dialup operates via a series of menus and options. Once set up it's very easy to use. It allows the setting up of complex Logon sequences and supports both Xmodem and the more sophisticated Kermit protocol.

```

* EDIT HELP MENU *
HELP = <ESC> H or <ESC> O | Redisplay page= tB
-----
Cursor Control | Screen Scroll
UP = tE or tK or <ESC> A | Line UP = tW
DOWN = tX or tJ or <ESC> B | Page UP = tR
LEFT = tS or tH or <ESC> D | Line DOWN = tZ
RIGHT = tD or tL or <ESC> C | Page DOWN = tC
-----
Delete | Insert
Character LEFT = <DEL> | Character = tU or <ESC> @
Rest of Line = tY or | Line = tM or <ESC> L
<ESC> J or <ESC> M
Character RIGHT = tT or | FIND | Exit Edit
tG or <ESC> N | = <ESC> F | = <ESC> E
-----
User sequences |
DEFINE = tU or <ESC> U | to embed any Control
INVOKE = <ESC> I - 9 | Characters, prefix with
                        tP or <ESC> R
-----
NOTE: tQ can be used instead of <ESC>.
  
```

Comm+ is probably the most sophisticated package available for the PCW, and even includes an editor for editing messages without leaving the program. Comm+ includes a script language that allows complex sequences of actions to be carried out automatically. A program for the power user.

This is the BB home service

Probably the most common home use for the wonders of electronic communications is to gossip via the bulletin boards, (BBs). In a way these are just like the notice boards found in schools and offices except that because the notices are on disc it's possible to take things from it and leave them there at the same time.

Unlike Prestel, which is a viewdata service operating a page at a time, the BBs send and receive discrete characters and normally these simply scroll down the screen as if being TYPED to it.

Very simple software can cope with sending and receiving under these circumstances, for example PIP or MAIL232 supplied with the PCW machines. The problems come if you need to be able to alter the speed of transmission while on line, or talk to your modem, or send and receive files with error checking. It's being able to cope with these disparate requirements that makes comms software a bit involved.

Anyone accessing one of the commercial services such as Telecom Gold or those organisations that allow you to search a database for articles published in newspapers and

journals (like Profile) or financial information (Fintel) will be aware of how much repetitive information has to be typed in before you can use the service (a process called logging on). This can include three or four rather long numbers as well as a password.

What has to be remembered when using comms is that you are usually dealing with another person via a computer (unless you're in commercial services in which case you're probably dealing with a computer alone) and that computers are spectacularly stupid.

When a computer is required to sort out the complexities of comms, which derive from the methods people have chosen to adopt, they usually need a lot of help to cope.

Fortunately for all of us, much of this help can be set up in the form of instructions that the software can file away and then carry out over and over again. Dialup makes this process particularly straightforward

So if you do propose to get involved in the part of comms which needs a lot of setting up you need the kind of software that can cope. You should be looking for a package that will maintain a list of telephone numbers and dial automatically and then follow up with the necessary sequences involved in completing a connection to a remote host (a host is the name given to the computer you're trying to connect to). This complete procedure is known as *Auto-login* and is a must for serious modem users

File away Peter, file away Paul

There is no single internationally agreed method for sending files with error checking. If the files you're sending are text then this probably won't matter, the odd spot of `"/%£€**+ "` is easily seen and dismissed as corruption by a human operator; the problem comes when transmitting program files and source listings.

It takes no more than a single byte out of place to make a program crash, or prevent a source listing from compiling. Obviously it's important that files like these are sent through uncorrupted.

The pragmatic solution is the use of the Xmodem protocol designed by Ward Christiansen. It became the de facto standard when he placed it, with documentation, in the public domain. Unfortunately, it has gone through a number

of incarnations, but most software that says it can do Xmodem, defaults to a set of minimum requirements. One irritating exception is UKM7 which uses a variant of Xmodem called Modem7 which supports batch file transfers and therefore insists on sending a filename and other header information as part of the transfer; oh well, it is free.

The other important protocol is Kermit (named after the frog – truly) which is also in the public domain. This originated in America as a personal computer to mainframe protocol but is now used generally. In England it is supported by the University of Lancaster who will supply it for most machines. Kermit is available as an option on most good comms packages along with Xmodem.

Let your fingers do the walking

Logging on manually can be a long and frustrating exercise. With Telecom Gold for example the procedure is: type the correct phone number for the speed you are using (a different number if you're going via a local PSS – which we do because it's cheaper). When the online light shows press [RETURN] [RETURN] a2 [RETURN] after which point we type in our NUI (Network User ID) NTLGOLD901TYM and the computer at the other end says ADD?. Now we type in our Network User Address which is A219201004nn where nn will be different for

different users (ours is 81 and probably refers to the particular Prime computer being used).

The computer comes back with another long string of numbers and words and it's time to put in your ID which is another string of letters and numbers (usually six of them) (isn't this fun?).

As long as there have been no mistakes you are asked for your password and – voila – you are connected. As you can imagine, having a software package that can automate all this is essential if you intend to make much use of the service.

F1 = Framing F3 = Files F5 = Connect F7 = OFF MAIL TERMINAL PROGRAM V1.2

```
Tx Baud Rate .. 1200
Rx Baud Rate .. 1200
Data bits ..... 8
Parity ..... NONE
Stop Bits .... 1
H/W Handshaking ON
```

Mail232 comes on your LocoScript disc, find it with Show hidden files. It won't do anything very fancy but you already have it so you've nothing to lose by trying it out.

of incarnations, but most software that says it can do Xmodem, defaults to a set of minimum requirements. One irritating exception is UKM7 which uses a variant of Xmodem called Modem7 which supports batch file transfers and therefore insists on sending a filename and other header information as part of the transfer; oh well, it is free.

The other important protocol is Kermit (named after the frog – truly) which is also in the public domain. This originated in America as a personal computer to mainframe protocol but is now used generally.

In England it is supported by the University of Lancaster who will supply it for most machines. Kermit is available as an option on most good comms packages along with Xmodem.

It's possible, if you are a commercial user with one of the new high speed modems that your equipment will have error checking built in. However, this is only of any use if your modem is talking to another modem with the same kind of hardware error checking. For general use with Bulletin boards and services like Telecom Gold you won't be able to take advantage of it. It's essential to make sure your software can handle the protocols.

Solving any one of the problems associated with comms isn't usually difficult; solving them all with one package is usually impossible; choose your software carefully. ■

Yours truly

With some modern modems error correction is built in, but to use it you must be calling someone with the same kind of modem. Something else to avoid is software with proprietary error correction protocols, these can only be used if the person receiving your files has the same software.

```
SYNTAX: primaryoption[secondaryoptions] [d:]filename [afn]
PRIMARY OPTIONS:
S Send binary files, afn list
R Receive binary files, drive:
T Terminal mode, filename optional
DEL Delete terminal file
DIR Directory list, afn optional
CPM Exit to CP/M.
LOG Log all drives
SET Set tx/rx baud rates (currently: TX = 31250, RX = 31250)
OPT Set tx/rx options (currently: PARITY:none, BITS:8, STOP BITS:1)
DRV Change default drive (currently: A:)
X Expert, toggle menus on/off
M Menu display
SECONDARY OPTIONS: (for primary options S and R)
N Non batch mode, send or receive file
Q Quiet mode, remote system Send/Receive
S,R,V Monitor data Sent, Received or View file
I Go to Terminal mode after file transfers
A ==>T

tT Transfer (Send) ASCII file without checks
tX Abort transfer initiated above
tC Computer mode, toggle echo on/off
t+ Send following character literally
tE Exit to command menu
tD Display terminal menu
```

The startup screen of the famous UKM7 public domain comms program. Easy to use and providing a trouble free introduction to comms. If you just want to talk to the Bulletin boards this program will do it.

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✓ A4 Cont	Last line of page
11" Fanfold	
2" labels	Keep current line with:
	?? lines above
	?? lines below
► Use Paper Type	
Show Paper Type	

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Longman's 78,000 word English dictionary

An automatic correction facility

A word count for LocoScript

B: group 0/LETTER .WIG Checking spelling. Printer idle. Using B:M: Page 1 line 3/54	
Layout 1 PiPS LSI CR+0 LP6	
f1=Actions f2=Layout f3=Style f4=Size f5=Page f7=Spell f8=Options EXIT	
Dear Peter	
Increased significantly, and perhaps now is the time to do business together at last.	
I have been ever feel that our call off in no have details of the above rang	
Perhaps we are particular to bundling some box. We are intending to use Meengross & Son's dongle-grognets, but think that your widgeits would actually be more suitable than Meengross & Son's. I refer, of course, to the special alloy widgeits you added to your range in December last.	
the coming months and widgeits, with monthly if you could let me current price breaks in	
t few months? In s. This will involve special presentation	
e ought to get together at some time to discuss a new project we have on the stocks. This will involve	
Stopped at: since	
Replacement: since	
► Use suggested replacement	
Replace and then edit	
Edit this word	
Consult dictionary	
Ignore this word	
Mark this word correct	
Add to user dictionary	

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THESIS THE WAY

Getting your facts straight isn't enough; now they have to look good too

If you ever intend to pursue further or advanced education then you'll probably be called upon at some stage to endure protracted periods of sleeplessness and starvation – a condition recognized by thousands of past and present students as being synonymous with the trial of writing a thesis.

Doing it properly isn't easy. It can involve months of work collating vast amounts of information from a wide variety of sources and funnelling it into a rigidly defined format. As with any large job tackling it in the right way will lead to success.

Most educational institutions do have their own guidelines when it comes to thesis writing and you would be well-advised to stick to them, but they aren't universally applicable. The presentation alone is of such crucial importance that it's surprising more fundamental guidelines as to the dos and don'ts of thesis presentation don't exist.

The good thesis is successful because of two factors: the information it holds is interesting and correct and it's been put together well. The first of these is largely up to you; the right layout, on the other hand, is crucial if your text is going to read well and be easily comprehensible.

A thesis could be anything over 50,000 words. Rather

than handling it as one very hefty paper, it will help to split it up into a number of smaller, easy-to-handle documents. If you intend using a word processor to write it rather than doing it by hand (and having someone else type it up) then splitting up your thesis is essential. Not only does it allow you to work with manageable files but it will safeguard most of your work should anything go wrong while you're working on one of them.

Stylishly impersonal

The style in which you write your thesis is up to you, although it's generally frowned on to use the first person in any shape or form. That's not to say that the tone of the

Graphic Details

If you are going to use illustrative material, it's worth remembering that the simplest graphic is going to be by far the most effective. The captions for those pictures should also be fully informative in their own right; you should be able to read them and understand exactly what's going on without having to refer to the main body of the text.

Thesis Your Life!

Ginny Lapage from Crowthorne in Berkshire is one of many who wrote her MA thesis with the help of her PCW 8512. She had just one year to write a 20,000 word thesis on 'The Study of the Oral Narrative in the Culture of Traveller Children' following a two-year diploma course in Children's Literature.

'My interest is in the oral tradition and folklore', says Ginny, 'and as I teach traveller children on a regular basis, the areas combined well for the subject of my MA.'

Ginny originally used LocoScript 1 for writing but later she graduated to LocoScript 2 and LocoSpell. A lack of total familiarity with the program did create its problems though. LocoScript 2 is very different from LocoScript 1 in several ways and Ginny found that she did lose a lot of time actually making the transition.

'Having said that,' says Ginny, 'the advantages of using LocoScript are considerable: experimenting with its various layout facilities allows you to end up with a very impressive presentation. You can number your pages easily, get your footnotes in the right place, justify both margins and so on.'

It also allowed me to use different layouts whenever I included examples of the spoken and written word and also children's writing and speech. The charts, appendices and bibliography were all impressively laid out and very clear to read as well.

Ginny kept two discs for her notes and three for the actual writing and backing-up of her thesis.

'I would strongly recommend that anybody who doesn't already know how to, learns to type before it comes to keying in the actual thesis. It'll save so much time in the long run. Also when you're dealing with something as important as this, get into the automatic habit of saving your work every 15 minutes or every time you get up to make a cup of coffee. Unexpected power cuts and surges can destroy hours of effort and care. Call it paranoia if you will, but I was making regular back-up discs and storing them in different rooms of the house; in cases of fire or flood, rescue your discs - everything else can be replaced!'

Another very important tip is to keep up a running bibliography. If you build it up as you go along, you'll have an excellent one at the end.'

It has to be said, though, that Ginny encountered her fair share of unexpected difficulties; 'I had badly underestimated the time required to print out the final copy. Towards the end I went for about 72 hours without any sleep to make the deadline. To make matters worse, I'd forgotten that all my previous copies had been printed out in draft mode and that the final one would have to be in near letter quality. That meant doubling the original print-out time until I realised I needed two copies of the thesis which



meant doubling it again.'

Ginny also found spell-checking her work quite problematic because of the highly specialised vocabulary that she was using. Of course, an added bonus of using a machine like the PCW is that you can keep all the information that was surplus to the thesis itself in an easily accessible form. Now Ginny is preparing to start her PhD on Romany Folklore and wants to retrieve all this so that she can put it to good use.

report has to be one of stilted formality, just as long as it's readable and relevant. There's absolutely no point in waffling your way through voids of inspiration or lack of information because the experienced examiner can spot it blindfold from six hundred yards.

It's a good idea to preserve continuity throughout the report wherever possible. Nothing is guaranteed to jar more on the eye than seeing the beginning of some paragraphs indented five spaces and then seeing others only indented three. The same is true of units of measurement, abbreviations, the size of captions and so on, so keep them consistent.

When it comes to deciding on the page format that you would like to adopt, the PCW paired with LocoScript 2 makes a winning combination.

The copy that you eventually submit should be printed out in Near Letter Quality. The dot matrix is especially good for project work of this kind not just because of the quality of the finished output but also because it's able to reproduce some rather esoteric symbols and the letters from both Greek and Cyrillic alphabets – either of which can come in handy during the course of scholarly quotation. LocoScript's layout facilities will also allow you to experiment with the various pitches available, although pitch 10 probably remains the favourite.

A thesis of this kind should, unless otherwise directed, be submitted on A4 size paper, with the text both left and right justified. Be careful though; it has been known for theses to be ditched without ever having been read simply because they had been submitted on the wrong sized paper. Double-line spacing is also recommended for the main body text.

Decimal numbering of paragraphs (1.1, 1.2, 1.3 etc) looks much more professional than any other method. It also tells you where you are in the thesis at any given time. Paragraph, 3.1, for example, would constitute the first paragraph in the third section of the thesis and paragraph 4.2 the second paragraph in the fourth section. Sub paragraphs would then be numbered 3.1.1, 3.1.2 and so on.

Terms of Reference

References are those works that you cite as support for the facts used in your text. If, for example, you make the point that Queensland koala bears are no longer inhabiting the red-thorned eucalyptus tree in favour of the black-gummed eucalyptus, you would include the name(s) of the authors and the issue date of the journal/magazine which published their work:

'Koala bears in Queensland show a preference for the taste of the Black-gummed Eucalyptus leaf (Cuddles and Bigears, 1984).'

An alternative way of citing references is to use numbers:
'Tears will spring involuntarily to the baby koala's eyes whenever it is removed from its mother's pouch'²

Whichever method you use will ultimately affect the way you lay out your reference section. In the first instance, your references will be listed in alphabetical order (following the name of the authors – Cuddles and Bigears) and in the second they will be listed in numerical order. The first method is perhaps the easier of the two to follow both in terms of consulting while you're reading and compiling while you're writing.

There are – not surprisingly – different ways of listing references depending on whether they come from journals or books. The most widely-accepted form for journal references is as follows:

- 1) The names of the author(s) – surname first followed by initials.
 - 2) The date of the publication written in full (1987 instead of '87)
 - 3) The title of the article.
 - 4) The title of the journal or magazine
 - 5) It's volume number
 - 6) The relevant page numbers
- It would look something like this:

'Dundee C. 1987. Behavioural mimicking in the duck-billed Platypus. Mammals and Water. 13, 75 – 79.'

References from books should be laid out slightly differently just to confuse the issue. You must quote the name of the editor where possible and the name of the publishing house like so:

'Cuddles, E. & Bigears J. 1984. The Neo-Structuralist Ethic in the Bonding Rituals of the Antipodean Marsupial (ed. Gulp, P.), pp. 234 – 256, Sidney, Waltzing Matilda Publications.'

Bound to Succeed

When you've read right the way through the finished copy to check for spelling mistakes, then it's time to consider how you want to bind your thesis – the icing on the cake. Some organisations lay down exactly how they want to see it presented, but often it's up to you. Having your work professionally bound is expensive and you may need more than one copy. Your best bet, by far, is to buy the bits and pieces you need (holepuncher, plastic spiral binding and hard covers) and do the job yourself for nothing.

If you do find yourself faced with the task of having to write a thesis, it might be worth remembering that you can never be too meticulous in the way you go about it. One of the most important factors is time: ie, give yourself plenty of it. And that applies along every stage of the way – from the conception of the idea (you're going to need months – perhaps more – collating information and carrying out experiments) to the final execution – typing it or having it typed for you.

There's no doubt that you'll have your work cut out but providing you give yourself enough time – and use it properly – you'll find that you've got a considerable headstart. ■

Bare necessities

- 1 The opening page of the thesis will consist of the title page on which the author's name and the title of the course are written. Don't forget to include acknowledgements, a list of the various abbreviations that you have used throughout the thesis and the contents index followed by a brief summary of the report.
- 2 The introduction attempts to put the reader fully in the picture. Describe the issue or problem your thesis will address and the findings of former researchers vis-a-vis that problem.
- 3 The third section of the thesis includes details of all experiments, treatments and approaches that were used by the author to address the issue; the reader should be able to repeat them from this information at a later date if it should prove necessary.
- 4 The fourth section is the results section; include the results of these attempts without fully analysing them at this stage. Now is the time to include all relevant illustrative material.
- 5 In the next section discuss your results, how they fit in with previous work and how they address the problem.
- 6 Then, in the conclusion tie all the loose ends together and make your findings strictly applicable to the issue being examined.
- 7 All references should follow at the end: these provide the foundation of the report and are very important. Forget all about faking them; they will show the work you've done.

Teacher's Pet

Paperbase is a bibliographic database from Wight Scientific which has been specifically designed as an aid to academic research. Into it you enter and then search through details of various publications – books, journals, magazines and so on. It also allows you use of an impressive number of keywords. Paperbase costs £49.95.

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Organising information is one of those activities that demands self discipline but repays the effort many times over. Unfortunately, while there are a variety of database programs that offer to perform the task they are exactly that, separate programs. This means saving your files, leaving your word processor, loading up the database to get at the information, exporting the information as an Ascii file to disc and then performing the whole process in reverse.

At that point, if you've chosen the right programs, nothing more remains but to merge the data you've extracted from your database with your text file and that's it; the work of no more than five minutes or so.

All this assumes that your information is in a form that can be held in a database, this is rarely the case. Most notes don't break up into neat fields but take the form *The Marmoset is a member of the family Callithricidae, a small monkey or perhaps Don't forget to buy two extra pints of goat milk when young Throgmorton arrives.* This kind of information is free form text.

There are programs to store and retrieve free form text but even then there remains the problem of getting at it when you need it, and the more often that is the more irritating it becomes.

Protext users already have the answer at their fingertips. The power and speed of the program can provide the answer to all but the heaviest of information retrieval needs.

Two gun text

The secret lies in the way Protext can edit two files at once. It is able to maintain them both in memory and allow text to be moved easily between them. The first file can be worked on and the second file kept for making notes, retrieving them or both. If we take the example of someone preparing a childrens book on frogs you can see how this works.

The first step is to create two files, one for the notes on frogs and the other as the first chapter of your book. It makes sense to call the data file FROG.DAT while the first chapter might be FROG.01 (or however you like to number chapters).

Since you are going to have to search the data file using the Find facility it makes sense to create unique headings in the data file so that the search will go straight to the information you need. A good scheme is to head subjects or sections with an asterisk before the word – for example *frog. Doing this allows you to find *Frog without having to stop at Frog, or FROG or frog and Protext doesn't have to check for the case which helps increase the speed of the search.

So now you can set up the headings in the data file –

Many people who write need to keep information to hand. It might be addresses, notes for an article, a thesis or something more formal like a company report.

All this information is usually kept in an untidy heap, (in the case of organised people), or in various pockets, folders, notebooks and on the floor in the case of the rest.

*frog, *amazon, *tree, *edible, *jump, *eats, *colour, *pets and so on, ready to store all your research notes in the relevant category. This file should be loaded at the start of every session to ensure that FROG.DAT is there when you want it.

Jumping to it

This is where the discipline comes in. Your notes should be entered under the relevant headings as you collect them. As the file grows the correct heading can easily be found with the FIND command, a process which can be automated by assigning the keystrokes you need to a key. For example key f ^254^find^13^ will put you on the command line, bring up the **string:** prompt and even put in the asterisk whenever you press [EXTRA] f.

When you've filled in the heading you want and pressed [RETURN] you will be asked for a list of parameters; use g for Global search.

Once the book is begun you will need to refer to the notes and perhaps copy them across to the main work. From the edit screen the command to swap files is [ALT] y. To get into the other file and use FIND put all the keystrokes on a single key; for example key s ^25^254^find^13^ which will swap files, call up the command line, invoke FIND, and write the asterisk automatically when you type [EXTRA]s.

To copy a piece of text once it's been found, mark the beginning and end of the block with [SHIFT][+] and return to the original file with [ALT]y. You can now copy the marked text to the cursor position with [ALT]o. This process can also be automated with key c ^25^15^.

Since the data file can be both copied from and updated as new ideas occur to you in exactly the same way as the actual document you're working on, it doesn't interfere with the flow of work. You also have the considerable advantage of being able to use it without ever leaving Protext or without learning new commands. You maintain the same level of flexibility Protext has accustomed you to. As a bonus Protext will even remind you to save the hidden data file if you have altered it and try to quit without saving it. ■

Call it intuition

We at 8000 Plus have loads of people phoning us up on a regular basis asking us how to get the circumflex (or ^) symbol.

Well, it may not be very intuitive but it's certainly very simple: it's an up arrow which you get by pressing [EXTRA]u.

Form follows function

A freeform database is one in which you aren't tied to the tyranny of fixed length fields and records. You can put in anything you like, anywhere, to any length. Technically your Protext data file is a sequential access file, this means Protext has to search it by examining each word until it finds the one it wants.

Second gear

Although Protext searches quickly by wordprocessor standards it can't match a purpose built database program for speed. To find a unique word at the end of a 40k data file took exactly 16 seconds; add the time to move from the file you're working

on and this is more like 20 seconds.

Against this, of course, you have to set the convenience of using just one program for both functions and the time it would take to load in a database and its data files each time you need to locate an item of

data. That's not to mention exporting the facts to another file, loading in Protext again and finally merging the file with the facts into your document.

In practise the wait for Protext to do it's stuff is just long enough for a good scratch.

WHAT IS CP/M?

CP/M doesn't have to be a walk on the wild side. Far from mugging you, it could become your friend

The fact that the Amstrad PCW machines come with CP/M as well as LocoScript is too often forgotten or ignored. Perhaps you bought the machine purely as a writing instrument and your intentions have remained pure. It might be that you genuinely aren't interested in what else your PCW can do, but often it's just the feeling that the whole thing is bound to be ever so complicated. However, a little understanding can help put CP/M in perspective.

Imagine that you've bought yourself a new car. It's a beaut; the gorgeous pillar box red coachwork and the 165 horsepower engine under the bonnet almost made the salesman's patter redundant. So you bought it, but when you open the door and climb in you discover that there are no controls. Naturally enough there isn't a lot you can do under the circumstances. All that power and glory underneath you might just as well be so much scrap since you have absolutely no way of controlling it.

In this situation you, the driver, are analogous to the software applications a computer can run; the car and its powerful engine are the actual hardware – equivalent to the big box with the monitor, keyboard, the circuit boards and all the electronics inside. The various missing controls that would allow you to actually make some use of the car play the same role as CP/M.

Without some system of controls neither the car nor the computer would be of very much use to you. In fact the analogy can be flogged a bit further down the road. In the

case of cars you expect the controls to be pretty much the same regardless of the make, model or colour, even though the suspension, the braking system or the engine may change from one vehicle to another. A CP/M computer is in the same situation; regardless of whether or not the machine is an Amstrad PCW. If the software was written to run on a CP/M system it will run on any CP/M system.

Bespoke computes

In the early days of computing the way the machine worked was effectively fixed at the manufacturing stage, a technique known as hardwiring. These early machines were very expensive and the people who bought them expected a lot of ongoing expense writing programs to run on them. Effectively, each machine was treated as a one-off device with its own specific needs.

The new 8080 microchip made it possible to build a very cheap computer, cheap enough for a mass market to develop, in business if not yet in the home. Within a few years of the launch of CP/M it became ubiquitous. Dozens of manufacturers launched machines based on the new chip and running the equally new CP/M operating system.

What made the whole thing self sustaining was the fact that no matter how strange or exotic the actual computer hardware (defined as the part of a computer system you can drop on your foot) the CP/M operating system offered a standard way for any application to access that hardware.

At the time this idea was itself fairly new. Generally, computer manufacturers had done their best to keep their systems proprietary, the idea being to lock the customer in,



More than 300 different CP/M machines were produced between 1974 and 1988. Of these more than 50 can still be found in daily use. The Bondwell 12/14 sported an early version of CP/M Plus while the Epson QX10 was a favourite machine of writers because of its fine keyboard and high resolution screen. These machines can often be bought at very competitive prices through the second-hand columns of magazines.

giving them only one source of software – the company they'd bought the computer from.

But then, with all those different computers running CP/M – an operating system anyone could buy complete with details on how to program for it – everyone and his brother began to write CP/M software packages. The availability of good software sold computers, and the success of the software application writers persuaded more manufacturers to use CP/M. The circle was complete.

Two part harmony

So what exactly was it that made CP/M so attractive to computer manufacturers? That's easy to explain; just as standardised controls in cars means that any driver can climb into any car and make it work so CP/M made all these machines look exactly the same to software applications (programs like Wordstar and Supercalc). No longer did programmers have to worry about which machine they would write for – with the attendant risk that the machine might fail in the market place – now they wrote for an operating system that had been implemented across so many machines that the failure of one manufacturer simply wouldn't matter.

How CP/M achieved this feat of standardisation is slightly less easy to explain, but by no means difficult to understand. Just like car companies the computer companies are constantly seeking to improve their products while simultaneously undercutting the competition. These apparently irreconcilable objectives can only be achieved by innovative engineering or the use of slave labour; and slaves skilled in electronics are hard to come by.

Since the companies have to innovate, and innovation means change, CP/M has to be able to change the way it sees the hardware, which can be implemented in all sorts of weird and wonderful ways, without changing the way it appears to a software application running under it.

Easy assembly in the home

To make this process easy for the computer manufacturer, who has to fit CP/M to his machine, the guts of the operating system come in two parts: these are called the BDOS and the BIOS. The first part is the Basic Disc Operating System and the second is the Basic Input Output System.

The way this works is that most of the things an application program will need to do are dealt with by the BDOS, which is supplied already assembled and without source code. By contrast, the BIOS is supplied only as a series of source files with nothing there but outlines of the routines that need to be implemented and details on how big they can be. It's up to the individual customer to fill in the details and compile the resulting code. In fact in the early days of CP/M (when real men programmed in assembler and their womenfolk bought them cups of coffee deep into the night) this source code was often supplied with the machine in case you wanted to improve on something or just

The man who wrote CP/M

Perhaps some of the charm of CP/M comes from the fact that it grew more by accident than by design; but however it happened Gary Kildall, who worked for Intel at that time, was the man responsible.

The actual genesis of CP/M was preceded by attempts to write a PL/M compiler for the 8080 chip in 1974 (PL/M was, and still is, a mainframe computer language). Kildall was the man trying to write it but he found himself hampered by the lack of an operating system. To get around this problem he wrote the first version of CP/M as part of the 8080 PL/M compiler.

Not so long before all this IBM had developed the eight inch floppy disc system and this had now crept out onto the open market. At that time there was no operating systems which would allow the 8080 chip to be used with the new floppy discs; Kildall decided that CP/M would do just that.

At this point things began to fall apart. Intel were embarrassed by the enormous success of their new chip and were experiencing severe management problems. They made the decision to jettison their software development section and concentrate on chip manufacture. Kildall found himself out of the commercial world and restricted to a lecturing role at the Monterey Naval Postgraduate School.

It was there that Gary Kildall and his students continued development of CP/M as little more than programming practise. Perhaps because of the number of people who worked on it the product became a remarkably reliable disc operating system for 8080 machines; it was also very nearly the first, and one of the very few that managed a genuine random access to the information held on the disc.

Someone else who had been interested in CP/M from the beginning was John Torode, an electronics engineer, who ran a company called Digital Systems. Torode began to market CP/M with the disc controller boards his company made for electronics and computer hobbyists. For the first



time CP/M was on sale commercially; and it began to attract a lot of attention. In 1976 Gary Kildall established Digital Research to market his new operating system (the original name was the far more interesting but less commercially sensible Intergalactic Digital Research).

Digital Research started with just Gary Kildall and his wife Dorothy working out of a shed in their garden, the rest, as they say, is history.

Chip chat

The big breakthrough came, as everyone probably knows these days, with the microchip, a computer on a chip. Intel led the way with a chip known as the 4004 (because it used a four bit word). This rapidly gave way to the then state of the art 8080.

CP/M is written completely in 8080 code, the kind we've been using in our assembler series. The programming utilities supplied with the PCW all use 8080 code mnemonics because they are the programs originally used to develop CP/M.

The Z80 chip was designed by the Zilog corporation and was always intended to compete directly with Intel in the lucrative market they'd created. It was far more powerful than the original 8080; it came with more internal registers for a start and it could run at considerably higher speeds. The Z80 chip includes the full machine code instruction set of the 8080 but adds many more of its own. Because of this extra power the Z80 became the standard chip on which to base CP/M machines.

alter the way it worked.

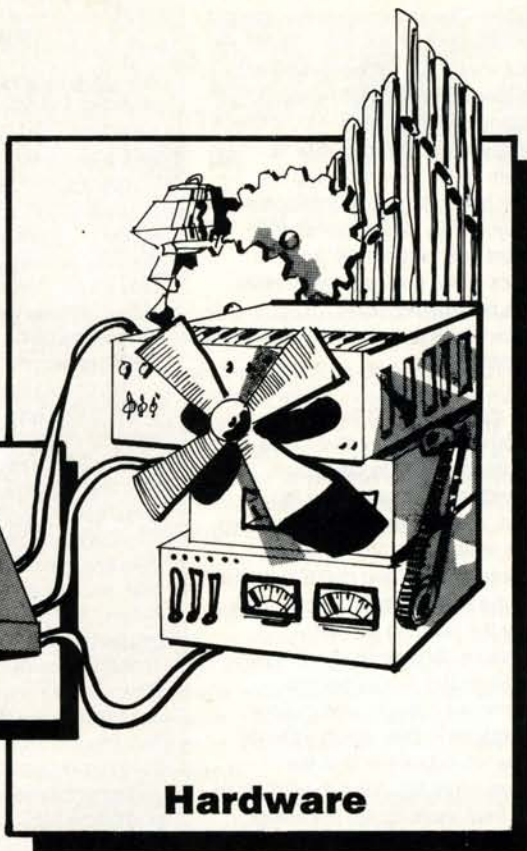
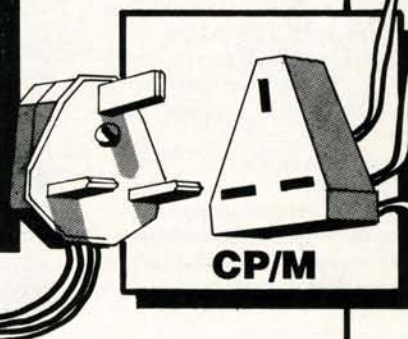
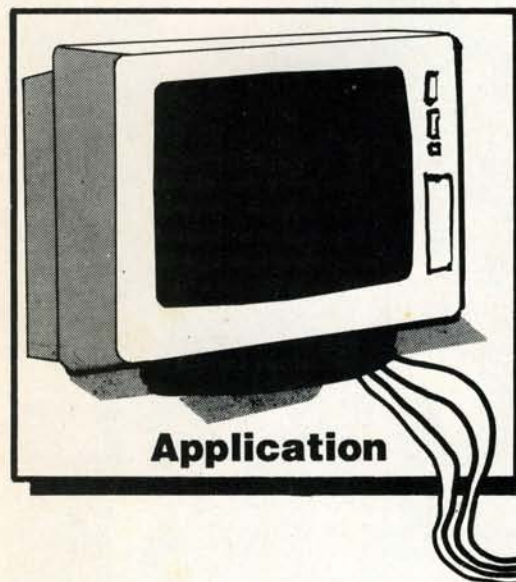
So now we have CP/M showing a different face to every set of hardware it meets but exactly the same face to the software. At this point, CP/M has taken the many and turned them into one.

And then there were three

So far, so good: we have the BIOS sitting there with its tentacles entwined through the hardware and we have the BDOS waiting to shake hands with any software application

The purpose of any operating system is to provide a standard interface between the electronic hardware of a computer and the software that is intended to run on it. No matter what the arrangement of the hardware, as long as it has CP/M implemented it will look the same to any application allowing it to plug straight in.

CP/M provides a standard software interface between hardware and software



that might come along, but let's imagine you've bought a program – SuperCalc for example – how does SuperCalc actually get into a position to take advantage of all this preparation?

Well in fact there is one final part of the jigsaw we haven't mentioned yet, the CCP, which stands for Console Command Processor. This is a program which the BDOS loads automatically every time there is a warm or cold boot (nothing to do with the weather – it just means whenever a program finishes or the machine is turned on).

The CCP sits below the BDOS in memory and is responsible for putting the A> prompt on the screen. Since it is effectively a program like any other there are things it can do and a lot it can't.

It's main function is to pick up the name of a COM file,

look for the file on disc, load it in at 0100H (just this one hex number, no more, we promise) and hand control over to it by resetting the program counter; easy really.

Of course the CCP can do various other file related things like typing an Ascii file to the screen, showing you a directory of any of the disc drives, erasing files and several other functions.

The CCP obviously takes up some of your memory space but CP/M has a rather clever feature; when a program is actually running – SuperCalc again – it can use all of the memory right up to the BDOS completely ignoring the presence of the CCP. As soon as SuperCalc (or anything else) finishes, BDOS loads the CCP back in again.

In earlier versions of CP/M this was loaded from disc but under CP/M Plus a copy is loaded from the banked memory. This makes the process fast, silent and invisible; in fact a lot of people who use CP/M are completely unaware that it is happening at all.

Ringing the changes

The first release of CP/M was version 1.3, rapidly overhauled by version 1.4. This was a marvellous operating system that allowed customers to run sophisticated programs using a machine with only 16k of memory.

The most important restriction imposed by v1.4 was that it only worked with single sided, single density eight inch floppy discs as defined by IBM. It was the introduction of the 5 1/4" microfloppy, as it was first called, that precipitated the release of v2.2.

In this second release some of the parameters that defined the disc format were removed from the unchanging BDOS and

placed instead in the constantly changing BIOS. All the confusion of disc formats that the CP/M machines are subject to is a direct result of this alteration.

As memory became cheaper the 64k limit began to look restrictive and so CP/M Plus was designed. Using bank switching techniques (which just means making extra parts of the memory temporarily available) a larger version of CP/M could be written allowing Digital Research to add many features found in other, more modern, operating systems (and some that still aren't).

Getting down to it

But why would anyone really want to turn over the system disc and leave the safety of LocoScript? Of course LocoScript 1 users had to do this to use Diskit for formatting discs but buyers of the 9512 don't even have to do that; they're missing a lot.

On the other side of that disc is a whole new world of programs: other word processors like Protext and Wordstar; programs to do things that LocoScript simply can't cope with - accounting programs for example.

To release the full power of the PCW computer it's necessary to get to grips with some of the thousands of applications available in the commercial and public domain worlds. Remember, it's CP/M that makes the PCW more than a word processor.

If you use *Mini Office* or *LocoFile*, here's what you've been missing:

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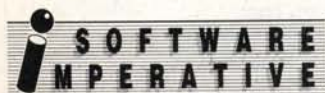
"FLIPPER is one of the most impressive utilities I've seen for the PCW"
John Minson, *Computer Shopper*

FLIPPER could do some pretty surprising things. It could split your PCW in two, letting you run LocoScript 2 in one half and a CP/M program in the other. Or it could let you load two CP/M programs at once if you preferred, one in each half. It could FLIP you from one half to the other in under 3 seconds, any time you wanted. And it wouldn't lose your place.

Unfortunately, there were a few things it

couldn't do. In particular, it couldn't load either *Mini Office Professional* or *LocoFile*. Serious shortcomings indeed.

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Two new databases to store and retrieve to.

KEYBASE**Unicorn Software (0602 636247)****● 8000s only**

In terms of sheer variety there are probably more databases on the market than any other kind of application. Unicorn Software's Keybase is another database written in Jetsam Basic and the latest newcomer to the already seething market serving the Information Technology boom. In this case, though, it's a question of information storage and retrieval.

First impressions of Keybase in action are positive. The presentation is slick and business-like with manifold options constantly available to the user. Thoughtfully included on the disc is a 'rolling' demo program which runs under Basic and which takes you step by step through some of the typical uses you might find for the program.

The only trouble with this is that the various screens follow each other in such rapid succession that it's impossible to read what's on them properly; you're left with the uncomfortable feeling of trying to 'snatch read' the credits at the end of a film which is rolling quickly to a close.

In use the program also loads itself into drive M. This greatly speeds up file searches and editing procedures

especially when you're working with large files. The program's default screen is also – unusually – black on green rather than the other way around.

Once you've decided on the format of your datafile, actually implementing it is no problem. All of the actions are prompt and neat. Keybase is a 'keyed access' database which means that you have to make correct use of the first eight lines of each record to get the most out of the program. Up to eight indexes are produced from the data in these fields; they provide the only means of access to the data and enable faster searches.

You don't have to specify numeric or string fields when creating your datafile format as everything is entered as if it were a string field. Once that format's been created you're committed to using it and cannot change your mind later, the data that you subsequently type in is stored as a continuous line of information.

Keybase's great strength lies in its impressive data search facilities. It has the ability to search through the data according to conditions defined by the user and to produce a detailed report of those records which match up to those particular conditions. These quite complex search patterns can be saved and reloaded to sift through data quickly and efficiently, especially when they're combined with the program's very powerful key indexing facilities. Polished-looking reports can be printed out from Keybase on the basis of these searches for inclusion in word-processed text documents.

The Keybase manual doesn't win any prizes for instant reader appeal. It's been put together in such a way that you're forever skipping around it trying to piece vital bits of information together. At times you feel that Keybase is trying to do too much and that if it only stopped trying so hard to compete with bigger programs it would be much more pleasant to use – even at the expense of some of its bells and whistles.

RANGE OF FEATURES	4/5	EASE OF USE	2/5
PERFORMANCE	3/5	DOCUMENTATION	2/5
8000 PLUS VALUE VERDICT 3/5			

STARBASE**£15 ● Kosmos (0272 613651)****● All PCWs**

If a multi-purpose database is what you're after, try this one from Kosmos. It may well have been originally designed with the disorganized music lover in mind (you know the feeling: loads of LPs or CDs laying around but you can never find the track that you want) but that's not to say that you can't use it for anything else – indexing your vast collection of 8000 Pluses, perhaps.

Starbase has been written in Mallard Basic using Jetsam and is generally a neat little program. What is mildly worrying is that Jetsam files can be made unusable if the database that you're busy creating becomes too big for the disc you're using. So don't forget to regularly check with SHOW.COM or DIR.COM that you've got enough room. Another thing that the manual strongly recommends, of course, is to make regular backups.

The program isn't at all difficult to use. If you've got an 8512, you can create your database on drive A or B although there are also facilities to run it from drive M which is a lot quicker. It's up to you to define the number and length of your various record fields, although the program's maximum is 8 fields and 31 characters per field respectively. Like most databases, once you've decided on the format of the records, it can't easily be changed.

Of course, one of the unexpected advantages that you gain by using Starbase (for whatever purpose) is that if you have any other Jetsam Basic databases that fit within the confines of this one – a maximum of eight fields with no more than 31 characters per field – then they can easily be converted to Starbase format using CP/M's NAME.COM and then defining a new Settings file, just as if you were creating a new database in Starbase. This option can give you an infinite number of databases on the same, easy-to-consult format.

Another facility on the disc, called Starmenu, lets you flip between one Mallard Basic program and another. You'll be prompted to enter the drive you require and a full directory of all the Basic programs present on the selected drive will be listed. All you then have to do is enter the name of the program you want to run. StarWC is another very useful program that is supplied on your Starbase disc and allows you to do word counts on an Ascii file (though don't use Page Image since carriage returns are counted as a word).

Starbase's various Search facilities are impressive. It's not that the program offers you six million different ways of searching your datafile, but you don't have to spend hours on end combing through the manual in order to get them going. A number of LocoScript-lookalike drop down menus appear on the screen from which you select your options. Starbase's Search facilities combine the rare qualities of being straight-forward, easy-to-use and perfectly adequate for the requirements of any user.

Starbase has resisted the temptation of trying to be all things to all men; consequently, it's a pleasant, unassuming package to use which can provide a mould for any number of databases – whatever information they hold.

RANGE OF FEATURES	3/5	EASE OF USE	4/5
PERFORMANCE	4/5	DOCUMENTATION	3/5
8000 PLUS VALUE VERDICT 4/5			

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IN THE FAST LANE

At last: foreign characters in LocoScript with the new 24 pin printer driver

The printer that comes with the PCW 8000 series machines had a nine pin print head that LocoScript used to good effect. The only complaint might be that it is a bit slow by modern standards. At least it could produce Cyrillic. But if you wanted to produce the foreign character set on the 9512 there were problems.

A new 24 pin printer can provide both speed and flexibility to any PCW user now that Locomotive have produced the special print drivers required.

Printer drivers are a piece of software that were completely hidden from PCW users under earlier versions of LocoScript. A printer driver is what LocoScript uses to drive the printer, simple really.

When there was only the standard dot matrix printer that came with the 8256 to worry about life was a lot simpler. In fact it wasn't even too complicated if you wanted to drive a different 9 pin printer via the RS232 interface – just so long as it supported the Epson printer codes (which the PCW emulated) and you didn't want to print the extra characters supported by LocoScript.

With the arrival of the daisy wheel printer that came with the 9512 (easier to drive than a dot matrix but totally different), Locomotive had to support a different kind of printer. Since there was now more than one printer driver to support it made sense to go the whole hog and offer the upgrade to driving the 24 pin printers which were just beginning to become affordable.

Users of LocoScript 2 will be aware of the arrangement whereby a file with the type PRI is needed as well as a font file with the #NN filetype, so it will come as no surprise to find that the 24 pin printer driver disc comes with a file called 24NECP6.PRI to actually do the driving.

The special characters produced by LocoScript are in the files marked 24PIN.#ST, 24PIN.#SS and so on. These files contain the characters that LocoScript will use in preference to the built in fonts of the 24 pin printer.

Prints charming

The reason you need a printer driver is that the special LocoScript characters need to be downloaded into the printer and these characters are the ones selected for use. As far as we know there are no printers available commercially in England that include both English and Cyrillic character sets as standard.

Of course you don't have to use the LocoScript characters but can use the built in fonts of the 24

printer or access the standard characters. To do this you would use the three files, NECP6X.PRI, NECP6.#HL and NECP6.#TM which are available for the 8256/8512 on the Printer Drivers Disc or for the PCW9512 on the Printer Drivers and Characters disc.

Locomotive are selling their printer driver with a NEC P6 printer, as you may have noticed, and a very nice, fast, heavy duty, printer it is too. But if you don't need either the abilities of an office quality printer or the price then they are offering it's baby brother, the NEC P2200.

There's no doubt at all that the combination of the 24 pin printer with the right drivers is a revelation. The print is incredibly crisp and clear as well as appearing out of the top of the machine at an amazing rate.

The question that does have to be asked (even if we'd have preferred to have someone else ask it) is should you buy a 24 pin printer, and specifically the NEC P6 or P2200, from Locomotive? Both of these machines are available mail order for *considerably* lower sums from other suppliers – and it's exactly the same machine inside the box.

If you want faster, better print from the PCW 8000 machines, or foreign characters from the 9512, then a 24 pin printer is a good idea; buy the 24 pin printer driver disc but think carefully before buying the printer itself from Locomotive.

Amstrad failure shock

Strangely enough the only 24 pin printer that should be avoided with Locomotive's new drivers is Amstrad's own 24 pin printer, the LQ5000. For so far undisclosed reasons printing is incredibly slow with the LQ5000 insisting on doing every line twice and underlining an incredible four times. You have been warned.

The head of the matter

The standard 9 pin printer has 9 pins in a single vertical row. To get good quality print it has to go over a line twice and move the platen slightly between runs. By contrast the 24 pin printers have two rows of 12 pins running vertically with the rows slightly offset so that the second row fills in the gaps left by the first. This allows the 24 pin printer to produce NLQ print in a single pass.



Despite its speed and flexibility, the NEC P6 is no bigger than the usual 9512 printer

TOY PLOY

8000 Plus exclusive – we sneak a look at the latest addition to LocoScript

There has been a lot of speculation and a variety of rumours concerning Locomotive's next release for the PCW. Our pre-release version is incomplete but enough is in place to give an impression of how the final product will look.

Don't call me Orthello

Reversi is the old game of Orthello, but Orthello is a registered trade mark so naturally can't be used. Reversi is a popular game for programming exercises and is often found as an example with computer languages.

The LocoScript add-on is so new that even the final name for it hasn't been decided yet; it is variously referred to as LocoExec and LocoToy; for now we'll call it LocoToy.

Like LocoFile LocoToy is intended to take advantage of the pop-up windows Locomotive are now using. After installation, using a variant of the installation program being supplied with LocoFile, LocoToy will appear on the [f1] menu along with LocoFile and will be available from the DMS as well as from within a document.

LocoToy uses graphics on the PCW, a big departure for the LocoScript environment, but there is a price to pay. As with so many modern programs the trend is toward greater demands on system memory; on an 8256 the installation procedure will abort after about ten seconds and display a message informing you that there isn't enough memory. To use LocoToy you will need an 8512, a 9512 or a memory upgrade. The only other restriction appears to be that you can't have a pop up toy on screen at the same time as a LocoFile card.

From the Executive Toys menu there are seven options including, among others, the famous Reversi, Newton's Cradle and a snowstorm. Not all of them have been fully implemented.

Executive Toys

Reversi
Sliding Puzzle
Newton's Cradle
Mobile
Plant
Date Blocks
Snowstorm

LocoToy can be called up from within a document or from the Disc Management Screen using the [f1] menu.

Newton's Cradle is perhaps the most addictive of the games. Tapping the space bar adds balls to a maximum of eight but it slows down dramatically with more than five on the screen at once. To start them moving just hold down either the left or right cursor key until the outside ball is as high as you want it to be, then release it.

Locomotive claim that the shipped version will run at the correct speed regardless of how many balls there are. Newton's Balls provide an extra goody in that Locomotive have managed to get a satisfying clunk out of the piezoelectric beeper in the PCW; no more of those unpleasant buzzing sounds.

Plants and blocks

The Plant option is very clever; a full screen window opens to show a plant growing on a window sill with hills beyond. All the time the window is open the plant continues to grow until after several hours it can fill the whole screen. There is a Prune option and a Water option which slow or accelerate the plant's growth.

On the green screen it's a treat, one of the few occasions when you don't want to be up to date. Perhaps one of the best features of the plant is that the current size can be saved to disc so that it can automatically take up where it left off the previous day.

The date blocks are only shown as outlines at the moment but the final intention is to have a variety of finishes any of which can be chosen from a menu (including several varieties of wood).

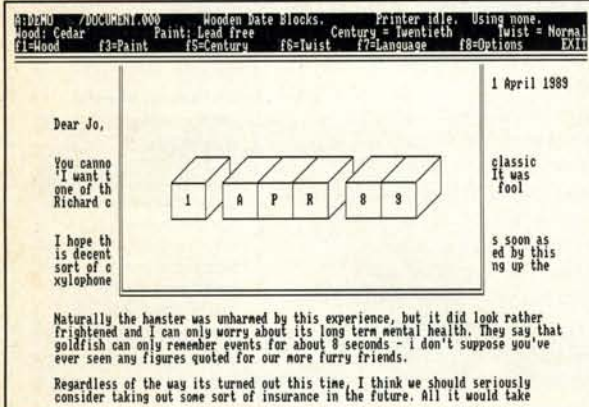
In use the right/left cursor keys select the blocks which can then be turned with the up/down keys to display the numbers you want, alternatively, the date can be entered direct. There are several setup options including displaying the date American style (month, day, year) and an option to have the blocks automatically updated from the system clock, which presumably means that Locomotive intend to support this feature in some future release of LocoScript.

Snow joke

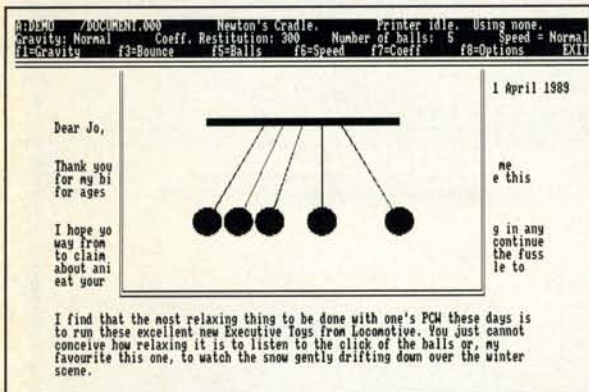
Certainly the most spectacular of the desk toys, and the one which gave us the most fun, is the Snowstorm, last on the menu. When you select this, a picture of an alpine village comes up with snow covering everything. It's real picture postcard stuff and unlike the plant really excellent on the paper white 9512 monitors. To get this one to work it's necessary to turn the PCW upside down and give it a little shake, this dislodges the snow.

Turning it quickly back up the right way just sit back and admire the way the snow swirls about the screen before slowly settling back onto the roofs and gables of the swiss village. The amount of time the snow takes before settling can be adjusted via a menu so that you can watch for up to about seven minutes before you need to repeat the process.

There are several things to watch out for with this option. The main one is damaging the ribbon cable but in fact our problem was dropping the monitor, something which the manual neglects to mention – definitely an oversight, Locomotive. In fact after using Snowstorm the PCW didn't work again.



The wooden date blocks aren't fully implemented yet, but when they are there will be a choice of finishes on the blocks as well as a variety of backgrounds.



Newton's balls have a wide variety of options which can be set to alter the way they work. One of the most unusual is [f1] which gives you a list of the planets in the solar system. It's possible to see how the famous balls would behave on Mars or Jupiter with their different gravities.

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GO WEST YOUNG MAN

Footballers will tell you that there is more than one way to get your kicks. Perhaps one of the more frustrating is the playing of adventures.



Since the first enthusiastic reaction to the PCW, the release of games for the machine has been steady, perhaps, at times, a little too steady. Having said that, the quality of the games that have been released has been exceptional. When you consider some of the dross released on other formats, where often inferior products are sold by a means of hype to naive teenagers, software companies have a lot to be proud of where the PCW is concerned.

The backbone of the games side of the PCW is the adventure. In recent months there have been some excellent products – Lancelot, Ingrid's Back and Corruption are just three of them. The tendency has been to move away from the text-only adventures such as Lord of the Rings and those produced by the American software company Infocom, to the greater use of graphics – often very high quality – which lend atmosphere to the game play (if nothing else).

Anyone who has played adventures will know that they are one of the most demanding forms of brain bashing that one can ever hope to experience.



Tenacity and determination are the qualities required, and you shouldn't expect to reach the end of an adventure in just one or two sittings.

However, like anything else, if you're going to get the most out of them, you need to follow a few simple techniques. Some of

these may sound obvious, particularly to the seasoned adventurer, but it is surprising how often they are ignored by new players who, as a consequence, can end up disillusioned and frustrated with something they've just paid fifteen to twenty-five pounds for.

Know yourself

Better packaged games are accompanied by a good playguide, which should be essential reading. It's important to acquaint yourself with the aim of the game and the role of the main character, the one that you're manipulating. If you don't really know what you're trying to achieve in an adventure, you will find yourself struggling aimlessly through an incomprehensible maze.

Most adventures contain the a similar stock of commands such as LOOK, INVENTORY, EXAMINE, EXITS and so on. In the old days what proved most frustrating was the way that you were always getting sent back to square one when you came to an untimely end. These days,

programs are a lot more merciful with UNDO or OOPs commands to rectify disastrous moves. Frequent commands such as WAIT and AGAIN can be repeated by the pressing of a single key.

The trend in adventure games these days is to enhance the fun and take out the frustration. Consequently, many adventure games come with hint sheets, or hints that are actually built into the program and can be accessed by keying in a list of figures. Whether this is a good or bad thing is hotly debated. The problem is that for the faint-hearted it might be too tempting to access the hints before they have really tackled the puzzles that the adventure throws up. On the other hand, if you are really stuck then they could be the only way forward.

The best adventures contain graphics but since these slow the game up they can usually be turned off. These days, the text can be read in brief and verbose modes. Which you choose – and obviously you can switch from one to another in mid-game – depends on how often you've played the game and, consequently, how well you know the text. Leather Goddesses of Phobos was particularly original in having three modes – tame, suggestive and lewd – which tied in with the whole tenor of the game. (No bets taken on which mode proved most popular).

The best way to go onward in a game is to know where you've been. Making a map of the game is really essential to avoid making work for yourself. The map can be quite simple – a few squares drawn on some rough paper with the name of the location in each box and perhaps the object that location contains. In this way you avoid getting lost and going back over old ground unnecessarily.

Without doubt, adventures can provide hours of innocent and enjoyable fun at a relatively cheap price. They certainly beat learning assembler for entertainment value. ■

Save the day

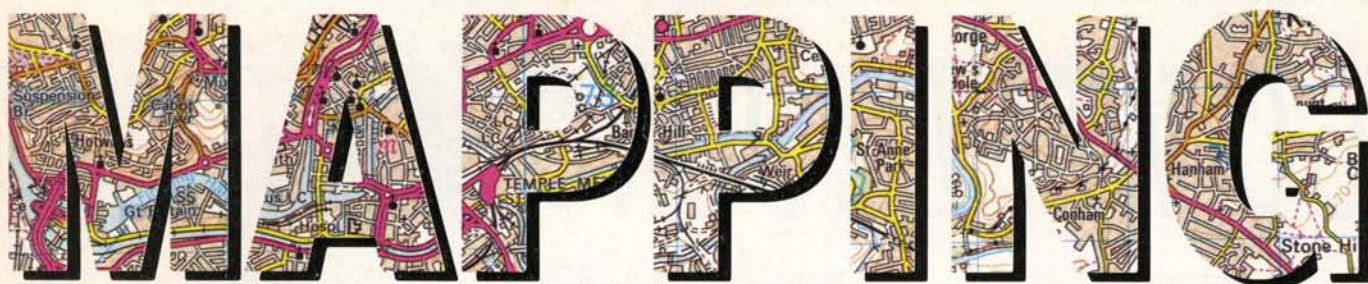
Most good adventure games come with a save facility which means that at the end of a session, or before a potentially lethal step, you can safeguard a position which might represent many hours of effort. This safety net makes adventures that much more playable.

Ten cryptic tips

1. Hitchhiker's Guide to the Galaxy: Junk-mail is very good when things get fishy. 2. The Pawn: Colours give light, blue red and green make white. 3. Guild of Thieves: If you want the the musical loot, you'll need to give the miller a cheque. 4. Time and Magik: In the Price of Magik, a flower can really open your eyes to a wonderful new world. 5. Gnome Ranger: You might be thought puddled but

you never know what treasure you might find. Splash! 6. Lancelot: Stay clean! 7. Jinxter: Ding, ding. Make sure you get off at the right bus-stop. 8. Lord of the Rings: If you're going to push ahead, make sure it's the eagle's 9. Corruption: There's more to a loo than loo-roll. 10. Fish: Waste not want not while you're lounging around.





MAPPING

THE WAY OUT

PCW-based guide-books? Whatever next? Sharon Bradley dons her hiking boots, packs her thermos and journeys into the unknown.

The software to leave the tourist guide standing has arrived on the scene. You've got to admit that it sounds unusual but Gilligan's Guide, as it's called, is a geographic information system specially designed for the PCW whose coverage is in full national grid reference form. It can do anything that the venerable Ordnance Survey map can do – if not a whole lot more. And you're not left with the irritating job of folding it up properly once you've used it – only marginally less wearing than trying to assemble the average deck-chair. It's been put together in a way that should appeal not just to the archetypal tourist but also to geologists, historians and industrial archeologists.

GILLIGAN'S GUIDE

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Each guide is based on a given area that is loosely 15 square miles. The demo disc supplied to us, for example, features an area of the SE Peak District that includes Bakewell and Matlock. The second of the guides currently available covers the part of the SW Peak District that features Macclesfield, Buxton and Leek. Meanwhile, a third, just about to emerge from the pipeline (if it hasn't already), concentrates on the N Peak District.

This program seems to have reached new heights in user friendliness. No manual is supplied with the disc because prompts appear on the screen as you go along. But for those who like everything to be set down in black and white (or perhaps green and black) there are several pages of on-line help available at the touch of any key.

Setting your sites

The system hinges on six options that are immediately available on loading the program. Option 1 contains an

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Simply press the number of your choice

- | | |
|--|---|
| LIST NAMES IN ALPHABETIC ORDER | 1 |
| LIST NAMES BY THEIR CATEGORY | 2 |
| WHAT'S AROUND THERE | 3 |
| HOW FAR IS IT? (as the crow flies!) | 4 |
| WHERE ARE WE NOW? | 5 |
| MAP SHOWING GENERAL SPREAD OF A CATEGORY | 6 |
| Help! If in doubt, then hit any other key. | |

The opening menu that takes you into the Guide. All you have to do is press the appropriate key. Meanwhile pressing [EXIT] brings you back to this menu.

Mapping in the Making

Nigel Gilligan, the man behind the Gilligan Guide series, works as a supplier of geographic information. This gave him the idea he needed to get going. Having spotted the niche in the market he embarked on the months of research needed to collate all the peripheral data for the first guide. As Nigel points out 'The program itself couldn't be easier to use – I wanted a complete moron to

be able to get on with it – but putting it together was quite another thing.'

Not surprisingly, Nigel has his own PCW at home. When he's not busy researching for the next addition to the Gilligan Guide series, he uses it for word processing: 'I wanted to prove that it's possible to produce a quite complex program on what is basically a pretty primitive machine.'

alphabetical list of all the places that can be found within the given area that's covered by the map. If you're looking for somewhere in particular, just enter up to the first four letters of the name and the list will begin from that point. You can then scroll backwards and forwards through it using the appropriate arrow keys.

What the list shows is the name of a place, its distance in kilometres from the nearest big town, its category (woodland, habitation, etc) and finally its east/north grid references. If the name is preceded with a [+] sign, you can call up additional notes on that particular feature or place and then the map will appear showing you its precise

location in relation to everywhere else.

If you're curious to know exactly what the Heights of Abraham consist of, for example, all you have to do is select it from the list using the arrow keys and then press [ENTER]. You'll then be informed of the grid references of the location and exactly what you can expect to find there: 'Above Matlock Bath. Access: foot or cablecar. A tourist attraction set amidst magnificent beech woodlands or hillsides. Site includes cablecars, mines and caves with guided tours, visitor centre and walks. Open all year. Admission charged'. That should give you just enough information to know whether you want to go there or not.

Using option 2 you can restrict yourself to the category of feature that interests you the most. If you select geology, for example, then all the sites of potential geological interest will be listed. Once more it's up to you whether you want to read further notes and see the specific location on the map.

Round Search

The third option will be especially useful if you have to stay confined to a certain area while following up a line of research. It enables you to choose any place featured in the system, select a radial search on it, and see what features there are within that radius. You can also specify which category of feature you're particularly interested in. If you're a frustrated historian who can only trundle around within a one hundred yard radius of his or her home base marker, it might interest you to discover, for example, that you've been sitting unwittingly within a stone's throw of an otherwise unmarked druid burial ground. You can also get a map up on the screen in front of you at the touch of a button.

A fourth option allows you to find the direct map distance between any two locations that you know to be included in the system. It will only give you the distance as the crow flies, but as with all the other options, you can get a map showing the location of the place you've chosen to make sure it's the right one before you go ahead.

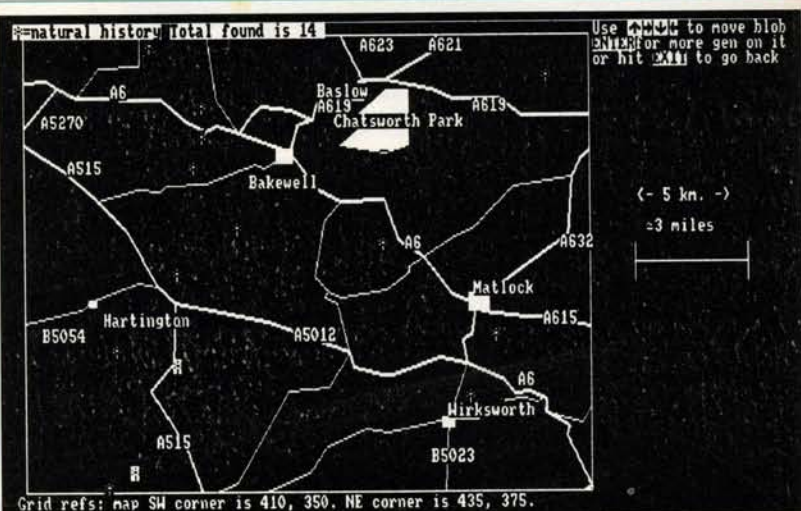
Icon see it

Option 6 is also very useful for specific interest purposes, as you can select a particular category of feature and apply it to the map so that only all the industrial archaeological sites, for example, are displayed on the map. All the sites within that category that have extra facts written into the system about them are displayed as flashing icons. Select one with the cursor and you'll be supplied with the name of the site as well as information on it.

Option 5, meanwhile, allows you to swap between 'home' and 'away' modes. What this enables you to do is place base markers on the map. You can also add two lines of descriptive text (or any other facts of your choosing) when you enter your 'home' location into the system. Basically, the computer can tell you exactly where you are by using three different methods: it can provide the name of your residence, display the full National Grid numeric reference or, finally, mount a revolving marker at the appropriate point on the map. The 'away' mode, on the other hand, really comes into its own if you live outside the area covered by the map but will be staying at some location within it. It can be altered each time you start up the program.

Made-to-measure maps

Also worthy of interest is the fact that you can commission your very own Gilligan's Guide which will be specific to the area in which you live or are interested. All you have to do is supply the grid reference of your 'home' location which will then remain permanently fixed within the system (unlike, of course, the 'away' base which can be altered at any time). If you don't fancy doing that, then describe your location using a map, so that Gilligan can do the coding themselves. £30 for such an accurately detailed personally tailored disc



Option 6 has been selected to show all the sites of historical interest alone as flashing icons on the map.

doesn't sound half bad to us.

The sheer versatility of the package is evident in the number of ways in which you can interrogate the system; you can, for example, find the information that you're looking for by a) an alphabetic list of places, b) a list of all the categories, c) a radial search relative to the location of your choice and finally d) using the symbols on a map. The amount of work that's gone into the preparation of this guide is obvious: having a lot of detailed information within your reach means nothing if it's shoddily presented or just plainly inaccurate. Gilligan's Guide is equally impressive on both counts – quite a major feat in itself.

It's true, of course, that the PCW won't make an ideal travelling companion if you decide on the spur of the moment to pack your backpack and take to the hills for a weekend. But provided you've done your homework properly before you set off, it will make sure that you don't miss anything of interest once you're there.

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1 PLACE NAME/FEATURE ETC	2 POSITION REL TO LOCAL CENTRE	3 DESCRIPTION	4 EAST	5 NORTH
Line - Good Luck Lead	5 KM S.W. of Matlock	outdoor pursuit	4270	3584
Good Luck Lead Mine	5 KM S.W. of Matlock	ind archaeology	4270	3584
Framework Knitters Houses	5 KM S.W. of Matlock	ind archaeology	4276	3580
Middleton Top Engine Ho	5 KM SOUTH of Matlock	gen. attraction	4286	3552
Wirksworth - Colehill Qu	5 KM SOUTH of Matlock	geology	4286	3552
Wirksworth-HighPeak trail	5 KM SOUTH of Matlock	geology	4284	3552
Line kiln (Via Gellia)	5 KM S.W. of Matlock	ind archaeology	4282	3574
Wirksworth - Massy Hill Quar	5 KM S.W. of Matlock	geology	4286	3591
Forest trail (Black Rocks)	5 KM SOUTH of Matlock	natural history	4293	3557
Wirksworth - Black Rocks	5 KM SOUTH of Matlock	geology	4294	3557
Cronford	5 KM SOUTH of Matlock	Habitat etc	4293	3556
Matlock - Bonsall fault	5 KM SOUTH of Matlock	geology	4295	3569
Cronford Mill	5 KM SOUTH of Matlock	ind archaeology	4297	3563
Cable cars - Matlock Bath	5 KM SOUTH of Matlock	gen. attraction	4298	3587
Culliver's Kingdom	5 KM SOUTH of Matlock	gen. attraction	4292	3581
Heights of Abraham	5 KM SOUTH of Matlock	gen. attraction	4293	3588
Mining Museum - Mat. Bath	5 KM SOUTH of Matlock	gen. attraction	4294	3581
Mine/cave - Great Masson	5 KM SOUTH of Matlock	outdoor pursuit	4293	3585
Mine/cave - Great Rutland	5 KM SOUTH of Matlock	outdoor pursuit	4293	3585
Mine - Nestus Mine	5 KM SOUTH of Matlock	outdoor pursuit	4297	3584
Matlock - Mat. Bath Station	5 KM SOUTH of Matlock	geology	4294	3581
Matlock - tufa deposits	5 KM SOUTH of Matlock	geology	4293	3585
Great Rutland Cavern etc	5 KM SOUTH of Matlock	ind archaeology	4294	3581
Peak Dist. Mining Museum	5 KM SOUTH of Matlock	geology	4297	3530
Matlock - High Tor	adj to Matlock	geology	4287	3604
Matlock-Cawdor Station Qu	adj to Matlock	outdoor pursuit	4298	3603
Indoor swimming pool	adj to Matlock	outdoor pursuit	4298	3602
Minestone Hay (south end)	adj to Matlock	outdoor pursuit	4298	3602
Riber Castle Wildlife Park	5 KM S.E. of Matlock	gen. attraction	4307	3591
Riber Castle Wildlife Park	5 KM S.E. of Matlock	natural history	4307	3591

KEY: [arrow] to go down (no [arrow] above top). [arrow] on line for more info/Map, [X] to leave

Choosing Option 3 takes you into the radial search. This screen shows all the features having notes on them that can be found within a 3 mile radius of the Heights of Abraham.

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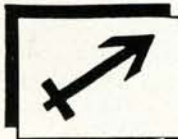
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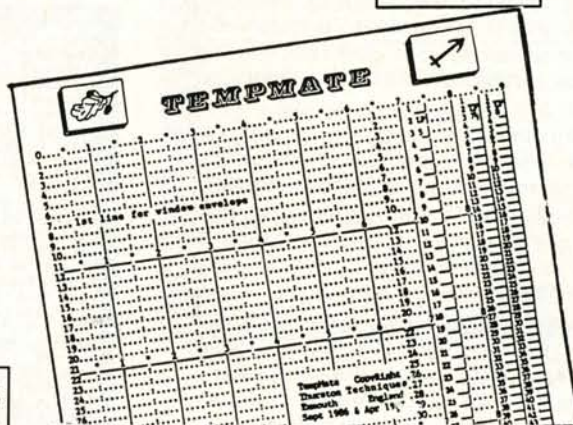
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JUST FOR THE RECORD

Getting the most out of LocoFile means putting the right data in.

Do you take a lot of photographs, a little snap happy? If they're all family snapshots then you probably don't need any help remembering where, what and when; but perhaps you're a member of a camera club, or photography is a sideline, in which case having them catalogued would be a good idea. Let's see how you'd go about doing this using LocoFile.

The first thing is to move away from the PCW and make a list of those things you'd want to know about a picture. You'll notice that three of the items on this list have the word key against them and one has sub key. When searching your database for a particular picture you might know what you want a picture of, when it was taken or you may already have a unique catalogue number for it. By making these items into keys you can find the record – and therefore the photograph you want – very quickly.

You are allowed up to eight keys in a record so you could specify every item in this list but clearly they aren't all useful in seeking out a photograph. In a long item (which Comment will be) only the first 30 characters will be considered by LocoFile so some thought would need to go into the entry if you did decide to use it as a key.

The next step is to design the LocoFile card that will contain this information. The constraints you're working under are that it can't be more than 80 characters wide and 99 lines long! Remember though, that if your card is more than 27 lines long you won't fit it all onto the screen at the same time; this would mean considering which bits of the record you needed to see immediately.

There is one other important consideration to make at this point. If you plan to use the database as a source for mailmerging using LocoMail then your item names have to be a single word and they must be the same word as is used in your LocoMail master document.

Collecting your cards

Designing a database involves several tradeoffs, the most fundamental being that the more information you include in each record the less records will fit onto a disc. LocoFile, however, is very efficient in its use of disc space. Only as many characters as appear on the screen are stored on the disc; also, if the item is empty then nothing is stored on the disc (in contrast to some databases where the space is used regardless).

It's best to design your cards on gridded paper before creating it on screen. This gives you the chance to get the layout right and will definitely save time. Allow yourself as much room for information as you might need, remembering that what you don't use won't take up space on the disc.

Finally, it's time to turn on the PCW, put in your Locoscript S.O.D. disc (the one with LocoFile on) and actually create the database. This should be done onto the disc the file will be used on so insert a new formatted disc and press [F7] for disc change. The next step is to pull down the [F1] menu and select Create LocoFile data. You will now be presented with a menu asking for a name, let's call the database Photo.dat. Once you press [ENTER] a blank card will appear ready to be filled in.

Now you have to sort out the card size and the items to go on it. Use the [F5] menu to alter the card size. When the

LocoFile has so much built in flexibility that the design of your database isn't as critical as it might be with some other database programs (no names, no pack drill). However, even with LocoFile it's still much better to get it right before you start since getting it wrong will absorb a lot of your valuable time in the long run.

A: group 0/PHOTFILE.DAT Datafile set-up.
4 records in 6k file (9% free) It
F1=Actions F2=Index F3=Item F5=Card F7=Menu

NAME	6k use	Main key type
group 0		<input checked="" type="checkbox"/> Alphabetic
group 1		<input type="checkbox"/> Numeric
group 2		<input type="checkbox"/> Date order
group 3		<input checked="" type="checkbox"/> Standard
		<input type="checkbox"/> Scandinavian
		<input type="checkbox"/> Cyrillic
		<input checked="" type="checkbox"/> Ignore case

Comments

When you select Scandinavian or Cyrillic to order your index on there doesn't have to be any of these letters in an entry, it refers only to the letter order used in those languages.

new sizes are confirmed with [ENTER] the card on screen changes to reflect the new values. Now use the [F3] menu labelled item.

The mighty item

On an empty card pressing [F3] produces a very short menu which offers to let you create a new item, confirm this with [ENTER]. You will now be offered a menu asking you to name the item, decide how many characters wide and high it will be as well as the line and column it will live on. This position refers to the top left hand corner of the item. The default for the placement is the current cursor position, so you can set this value with the cursor keys.

It's worth noting that the item is the actual data you will put in and that the name you give it serves merely to identify it, thus the item called Date contains data concerning when you took the photograph.

One very unusual feature of LocoFile is the way the item name is positioned. When you create or alter an item you are also offered the option to Hide or Show the name as well as the chance to place it at a variety of positions around the item.

This is done using a clock metaphor, with the default being 11 o'clock. As you would imagine 12 o'clock is top dead centre, 1 o'clock is top right hand corner, 2 o'clock is top right side and so on. Simply select the option and alter

Fielding the question

If you already know something about databases you will be wondering why we refer to fields as items all through this tutorial; the answer is that Locomotive do it in their manual. The fact that one of the few terms in computing that everyone agreed on has now been thrown out of the window is unfortunate. Why did they do it?

Item	Number of Characters	Indexed?
Subject.	20	key
Location	20	subkey
Date	10	key
Type of picture	10	
Catalogue number	10	key
Technical details	60	
Comments	200.	

Making a list of the items that need to go into your database helps you to get your real needs straight and helps you to avoid unnecessary work.

5	Subject					Date		
10	Location					Type		
	Technical details					Catalogue No.		
15								
20	Comments							
25								
30								
35								

After the list is complete the card should be designed on a sheet of gridded paper. It's important to get this looking good with the information you need first clearly presented.

the time, when you press [ENTER] the label will have moved to the new position.

Once all the items have been entered onto the card (created) it's time to index the ones you will be using to extract information (and after all, actually getting reports out of a database is the only reason for putting anything in.)

Index look

On the photograph database you will have three main key index items and one sub key. The first will be the Subject (with Location as the sub key), the second the Date and the third the Catalogue number; they're all different kinds of index.

There is one index created automatically by LocoFile, the Record number, which simply records the order in which the records were entered. The first useful one is Subject. Since you are still on the database setup screen you just press [F2] for index and select Create new index from the menu. When you press [ENTER] you get another menu offering a list of items on the card to choose from. Normally, if the cursor was already on the item you wished to index then this will have a

tick by it, otherwise cursor down to it and press [+].

On pressing [ENTER] another menu comes up asking what kind of index you want, Alphabetic, Numeric or Date. For the Subject field select Alphabetic. You won't find another package that promptly asks if you want to use the standard alphabet, the Scandinavian one or Cyrillic! (All right, so you wanted Greek, there's always one dissatisfied customer). When you've made your choice and pressed [ENTER] you will be offered a further menu that looks quite complex, in fact most of the menu is for your information only.

Sub you too, oh.

The option to add a sub key allows you to specify a way of choosing between identical main keys. In this example, if you had twenty photographs of Iguanas then the sub key, Location, would allow you to specify at which zoo you had taken them. This is a very useful option and one which can take you straight to the record you want even when several records have very similar contents.

Change main key just let's you change your mind, although you can do so at any time even after you've begun using the database simply by pressing [F1] and selecting database setup. LocoFile's handling of dates is extremely good, much better than most. Dates can be entered in a variety of ways. The American format or our own are just two options, you can also have year/month/day, day/month or month day. The separators can be any non-numeric character or even none at all. This is a powerful feature that LocoFile users will quickly get to take for granted and one which all those who struggle with dates in less powerful programs will hate you for; just tell them to upgrade to a PCW.

The final index option is numeric which is self explanatory. The only choice here is between a full stop and a comma as a separator – Europeans use a comma instead of a decimal point for reasons known only to themselves.

So, with your card set up, all the items in place and the indexes sorted out, pressing [EXIT] will make LocoFile put you on the first record. Press [EXIT] again and quit LocoFile so that you can make a backup copy of this file template — you know it makes sense. ■

```

A: group 0/PHOTOFILE.DAT LocalFile.
Index: Record number Unique
f1=Actions f2=Index f3=Item f4=Print f5=Goto f6=Find f7=Extract f8=Options Exit
Printer idle. Using A: M:
Col: 1/55 Line:14/15
Record: 1
Changed
v k v k
6k used 172k
group 0 3M
group 1 0k
group 2 0k
group 3 0k
A: group 0
0 linho fi
PHOTOFILE.DAT
Subject assemble Date
Location Type being
Tech Details Catalogue No.
free 3 files
group 4 0k
group 5 0k
group 6 0k
group 7 0k
Comments

```

The final card on screen. Notice that only the item selected is actually highlighted by LocoFile.

● Next month we show you how to get information back out of the database in the form you need it. How to incorporate LocoFile data into your documents and produce lists from a datafile. Don't miss it, order now.

MASTERFILE 8000

FOR ALL AMSTRAD PCW COMPUTERS

MASTERFILE 8000, the subject of so many enquiries, is now available.

MASTERFILE 8000 is a totally new database product. While drawing on the best features of the CPC versions, it has been designed specifically for the PCW range. The resulting combination of control and power is a delight to use.

Other products offer a choice between fast but limited-capacity RAM files, and large-capacity but cumbersome fixed-length, direct-access disc files. MASTERFILE 8000 and the PCW RAM disc combine to offer high capacity with fast access to variable-length data. File capacity is limited only by the size of your RAM disc.

A MASTERFILE hallmark is the provision of multiple, user-designed display formats. This flexibility remains, but now it's even easier. With MASTERFILE 8000 you design your formats "live"; no more questionnaires, just move your format effects around the screen using the cursor keys!

Record updating is even easier than before — just steer your cursor to any field on the screen and then insert/erase/alter as required.

Special options are provided for handling dates and surnames, and column totals can be generated.

All screen work is done graphically — and hence we offer unique panel, box, and ruled line options. Choose the line spacing at pixel resolution — you will be amazed how much clearer 9-pixel lines are than the usual 8-pixels. (Study the picture.) And all this faster than CP/M normally lets you paint the screen! PCW printer functions, under menu control, are provided.

Customer Details and Invoices

British United Freight
493 Western Avenue
Gloucester
GL9 5JN

Tel: 0452 6
Contact: Mike
Ref: BUF

Invoice	Tax point	Amount	Date paid	Comments
12044	20 Aug 87	£235.00	02 Oct 87	
12399	29 Aug 87	£98.00	02 Oct 87	
12450	01 Oct 87	£305.00		
12453	21 Oct 87	£133.00		
12533	03 Nov 87	£1,004.50		
12538	10 Nov 87	£355.65		
12743	18 Nov 87	£200.00		
12782	11 Nov 87	£39.20		
12839	04 Dec 87	£883.55	04 Dec 87	Cash with order
Totals:		£3,253.90		

Date of invoice

Drive: A File: INVOICES Records: 00017 Selected: 00009 New: Format: 1

03: Display Options

Steer using: 0014

Alter data: DEL

Erase data: DEL

Assign to set: R

First page: ENTER

Next page: ENTER

Find key = or >: F

Go to record number: G

Print: P

Print single record: P

Erase record: E

Insert new record: I

Show re-sequenced: R

Rotate format: R

Go to search: S

Exit to main menu: X

Keyed files are maintained automatically in key sequence, with never any need to sort. You can have unkeyed files too, where records can be inserted at any point in the file.

Any file can make RELATIONAL references to up to EIGHT read-only keyed files, the linkage being effected purely by the use of matching file and data names.

You can import/merge ASCII files (e.g. from MASTERFILE III), or export any data (e.g. to a word-processor), and merge files. For keyed files this is a true merge, not just an append operation. By virtue of export and re-import you can make a copy of a file in another key sequence. New data fields can be added at any time.

File searches combine flexibility with speed. (MASTERFILE 8000 usually waits for you, not the other way around.) You can even assign subsets of a file into one or more of seven pigeon-holes for subsequent reference or further manipulation.

Megaglomerate Ltd

Sales Contact: Martin McManis
Telephone: 0245 654321
Reference: MGL
Date of last order: 14 Aug 86
Value to date: £31,455.00

Mega House
143-145 London Road
Chelmsford
Essex CM1E 5EG

Ref	Maker	Model	Specification	Price ex VAT
C5001	Epson	P205	100cps 40x10 10col	£310
C5002	Epson	P205	100cps 40x10 12col	£410
C5003	Epson	P205	100cps 40x10 12col	£195
C5004	Epson	P205	100cps 40x10 12col	£435
C5005	Epson	P205	100cps 40x10 12col	£575
C5006	Epson	P205	100cps 40x10 12col	£395
C5007	Epson	P205	100cps 40x10 12col	£275
C5008	Epson	P205	100cps 40x10 12col	£335
C5009	Epson	P205	100cps 40x10 12col	£225
C5010	Canon	455	100cps 40x10 12col	£370
C5011	Canon	455	100cps 40x10 12col	£240
C5012	Canon	455	100cps 40x10 12col	£410
C5013	Canon	455	100cps 40x10 12col	£350
C5014	Canon	455	100cps 40x10 12col	£1,795
C5015	Canon	455	100cps 40x10 12col	£2,700
C5016	Canon	455	100cps 40x10 12col	£1,500
C5017	Canon	455	100cps 40x10 12col	£2,650
C5018	Canon	455	100cps 40x10 12col	£285
C5019	Canon	455	100cps 40x10 12col	
C5020	Canon	455	100cps 40x10 12col	
C5021	Canon	455	100cps 40x10 12col	
C5022	Canon	455	100cps 40x10 12col	

Format: 1

FIELD-TO-FIELD CALCULATION is available, using any mixture of terms and arithmetic operators + - * / ().

MASTERFILE 8000 is totally menu-driven, fully machine-coded, and comes with example files and a detailed manual. We claim (modestly) that you will not find another filing system with such power, flexibility, and friendliness.

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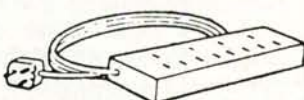
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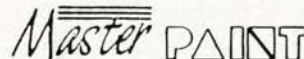
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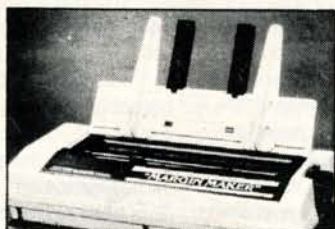
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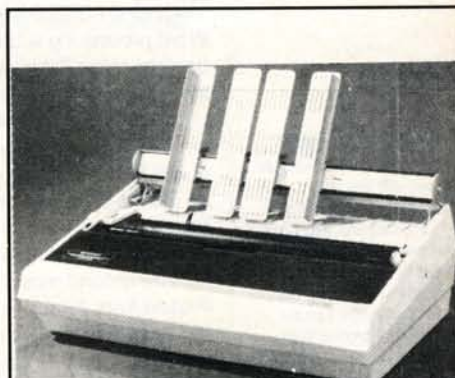
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COMMON INTERESTS

Bridging the gap between PCW and PC: Adrian Wilkins shows you how.

You will recall that one of the reasons for upgrading to a PC was that your PCW had run out of steam for business applications. You've raided the piggy bank, and bought the hardware - now to have to dip in your pocket again for new software, for the processor in your PC is an 8086 which will not run CP/M software.

Since running MS-DOS will itself be a culture shock, and because you don't want to overload the neurone circuits, it will obviously be a great help if you can find something with a compatible user interface on your new machine. The sensible answer is to try and find the same package on the PC. Because the PCW has proven very popular a surprising number of applications have made the move in both directions and you may be pleasantly surprised to find that the move is nearly painless.

Word-processing

Word processing is undoubtedly the most popular computer pastime (after Tetris) and people do grow very attached to their first word processor. It has already been mentioned that LocoScript worshippers have no migration path to a PC, at least not yet, so you will have to settle for one of a multitude of MS-DOS word-processor packages. Of course you will be able to take your text with you just so long as you can convert all the relevant files to ASCII and send them up the wires as was explained last month.

The second most popular WP system for PCW owners is Protext from Arnor. This is the more author-orientated of the two popular word processors, being very much faster at scrolling through a long document (yes faster even than LocoScript 2), and therefore of relevance if you are writing volumes at a stretch. Happily with this package, a PC version is available, and furthermore it is operationally the same (although with added features). The data files (i.e. your text) are not instantly compatible between the PCW and the PC, but the package is supplied with a conversion utility. So, if you are firmly wedded to Protext on the PCW, there is no reason to change to anything other than Protext on the PC.

Unfortunately, there is no trade-in possible for your PCW discs, but happily the cost is not astronomic. You can get further details from Arnor on 0733 68909.

Import/export

If you plan a painless transition between PCW and PC there are a few simple points it might be worthwhile bearing in mind. The first thing is to find out whether or not your favourite PCW package is available for the PC. The next step is to find out if you can export from one and import into the other. If you can then you have a head start.

If your dealer can't help you to discover this

information - a not unknown situation - ring the originator of the software (the manufacturer).

Even if nobody else knows the people who wrote the software will be able to tell you just how compatible the two versions are. If your package came from the USA you may have problems; perhaps it's time to start thinking about flying the flag and buying British..

Databases

Generally speaking, most databases are capable of exporting their data as an Ascii file, and of importing it the same way. As a result there isn't quite the same worry about compatibility. The main problem will probably come in learning to use a new package.

One group who can avoid the worst of this are those who know Masterfile 8000, where the obvious upgrade path is to Masterfile PC. Again there is no trade-in possible, and the two programs are not identical (to quote Mr Campbell himself: they are "similar but different"). The typical user should have no real trouble migrating from one to the other, and if you do then a telephone help-line is available. The data structures are rather different, and files have to be "exported" out of one format and "imported" into the new. Fortunately these are standard features of Masterfile in any case, and some users may already have encountered them in previously upgrading from an Amstrad CPC machine to the PCW. More information from Campbell Systems on 0378 77762.

Spreadsheets

Users of spreadsheets have both very good and very bad news. The first piece of good news is that spreadsheet packages on the PC tend to be much more powerful and to allow quite gigantic sheets to be built. For all those people frustrated by the relatively small usable memory of the PCW machines the sudden freedom can be quite heady..

The second piece of good news is that if you've been using SuperCalc or Visicalc on the PCW machines then you will find equivalent packages on the PC; and in use they are much the same apart from the increased range of functions that have been built in.

The bad news is that you can only take your data across with you and not your functions. You will have to rebuild your spreadsheets from scratch. This won't be too much of a burden since presumably it was the size limitations that pushed you in the first place.

The second bit of bad news is that Spreadsheet packages on the PC tend to be considerably more expensive than they are on the PCW. In fact you can pay as much for the spreadsheet as you did for the entire PCW plus the software. Still, at last you will be able to swop - my spreadsheet is bigger than your spreadsheet - stories with other executives now.

Payroll Packages

Essentially, the way a computerised payroll system works is that on April 6th it starts with lots of empty records, one for each employee, and a whole year's worth of tax allowances. Each pay day (week or month) a further entry is added as a result of that period's pay calculations (NI, PAYE, SSP, etc). And so it builds up until on the next April 5th everything is regurgitated onto paper, printing the P11's, P35, P14/P60's and anything else required before zeroing all the records again.

For this reason you would have to be out of your mind to transfer a payroll during the fiscal year, and the only real time to do it is on or immediately after April 6th (...so you had

better hurry!)

Of course, during the year dozens of employees have left your company, and they don't have to be transferred. But don't sell your PCW yet because you have to keep all the records for six years.

The upshot of all this is that on balance it is probably easier to start from scratch and key the basic details onto your new payroll system, rather than attempt to transfer them electronically. On the question of functional compatibility, it is inevitable that the PC packages offer more features and facilities, though with both MAP and COMPACT the two versions do look alike. However, SAGE payroll has been completely redesigned (PAYROLL-II for the PC) which is totally different from its predecessor, and hugely better as a result.

Accounts

If there was ever a case where "better the devil you know than the devil you don't" applies, it is in accounting. A company accountant may well spend more time in front of his computer screen than he does his television, and familiarity breeds fluidity not contempt. He will probably wish to stay with the company who produce his current accounts program unless he is utterly disenchanted with them. Changing vendors means making mistakes initially. And we all know how time-consuming it can be to track down accounting input errors and put them right. So here is the good news:

MAP Accounts: The PCW and PC packages are very similar to operate, although once again the extra memory and facilities of the PC enable the PC version to have more frills. MAP offer a trade-in price of only £50 plus VAT for the upgrade to Integrated Accounts, and they will also convert your existing data for only £25 per disc. Further details from MAP on 061 624 5662.

COMPACT Accounts: Wait for it. The PCW and PC packages are exactly the same, being written in Mallard Basic. So while you can't transfer the accounts programs themselves, you can transfer all the data files (the *.01D and *.01K files) using Mex and Procomm, and presto you wouldn't know you were running on a different machine. Except that it goes much faster.

There is a further upgrade path possible to Compact Professional if you want to take advantage of the extra features available. Contact COMPACT on 0703 611214.

SAGE: On the PC, SAGE offer a family of packages starting at the basic Bookkeeper (£99) and rising through the Accountant (£149), Accountant Plus (£249) to the Financial Controller (£399). None of them is compatible with the PCW Popular Accounts either in terms of operation, and certainly not in data format. There is no conversion program, and neither can Sage offer to convert your data for you.

Furthermore there is no trade-in discount on your old PCW disc. Having said all that, if you are an advocate of Popular Accounts then you will like The Accountant. It is exceptionally fast in operation, delightfully presented, and packed with goodies. You will actually want to type in your data from scratch because the package boasts Alphabetic account references for the Sales and Purchase Ledgers, which are so much easier to remember than the numeric-only account codes. And we can see that you are just itching to get your hands on the various report generators (supplied as standard). Sage can be found on 091 213 1555.

As with a payroll system, there is a right and a wrong time to transfer to another machine. The right time is just after the end of your financial year, when all your trading account balances - that is to say, Sales, Purchases into Stock, and Overheads (or Profit and Loss accounts) - are all set back to zero, leaving only the balance sheet items with a residual balance. Remember, if you're in any doubt at all, consult your accountant.

Essential Procomm set-up parameters for

Due to lack of space last month a lot of the detail on setting up Procomm to work with the PC to PCW link went missing. First type ALT plus S to select Setup, then select the appropriate menu (as below), then the number of each option; use the

space-bar to cycle through available options until the desired one is reached or alternatively type in the required value.

Terminal Set-up

1. Terminal emulation VT-100
2. Duplex Full
3. Flow control XON/XOFF
4. CR translation in CR
5. CR translation OUT CR
6. BS translation NON-DEST
7. BS key definition DEL
8. Line wrap ON
9. Scroll ON
10. Break length 1000
11. Enquiry(Ctrl/E) OFF

General Setup

1. Editor name C:\RPED (or whichever editor you choose)
2. Default d/l path
3. Default log file PROCOMM.LOG
4. Screen dump file PROCOMM.IMG
5. Screen write method DIRECT
6. Translate table OFF
7. Sound effects ON
8. Alarm sound ON
9. Alarm time(secs) 2
10. Exploding windows YES
11. XMODEM mode NORMAL
12. Xlat pause character ~
13. Xlat CR character !
14. Xlat CTRL ^
15. Xlat ESC :
16. Aborted downloads KEEP
17. Transmit pacing(ms) 250

Host Mode Setup

1. Host ID string Welcome to PROCOMM
2. Auto answer string ~~~~~ATS0=1! (enables you to use a Hayes-compatible modem from Procomm, but not essential here)
3. Host mode password PASSWORD
4. DOS shell password SHELL
5. Auto baud detect NONE
6. Connection type DIRECT

Conclusion

If you're planning to move from the PCW to the PC world and regard your computer as a tool rather than a source of entertainment then the move should be planned rather carefully. The fact is that in a business environment the move is going to cause a lot of dislocation and can involve more than the obvious cost of the computer and software.

If your computer is a business tool then you couldn't be better advised than to move slowly and get good advice from professionals - and preferably, from someone who has already done the same thing. ■

Risky Business.

For the casual user moving from one computer to another is nothing to worry about. The poor fools probably think it's fun. But for the business user changing machines can be a very serious business offering a number of possibilities for losing money.

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THE TECHNICAL DOCUMENTATION HANDBOOK

by A J Marlow

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Technical writing is a much under-rated skill. The computer industry, among others, is becoming increasingly dependant on well-produced documentation to accompany its products, and yet in no other genre of writing can you find so much shoddily-presented, misspelt output.

In the world of computing most of the vitriol is reserved for software manuals. When you consider that it's this documentation which carries the company's image to the user of the software, it seems like a good idea to try and get it right.

This book provides interesting and practical advice on how to do just that. It's of interest to anyone involved in the publication cycle of technical documentation for the computer industry – authors as well as publications managers.

Marlow begins with the premise that the technical author is just as important as the programmer or analyst. Understanding the reader's requirements is essential in order to produce interesting and useful material. It's easy, for example, to describe all the bells and whistles of a product, but not so simple to explain the benefits that a user can derive from them.

Marlow goes on to say that a good command of the English language is of paramount importance; it's a myth that people who read technical documentation 'just want the facts.' While no-one is going to write in and complain about spelling mistakes, they might conclude that they're symptomatic of a general lack of attention to detail.

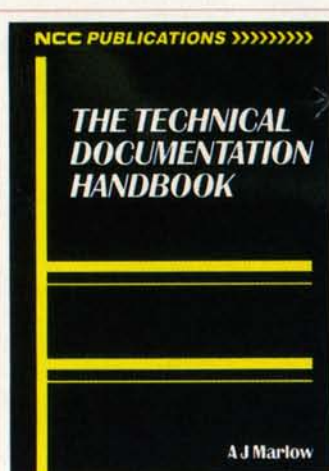
The first chapter ends with 'Questions to ask yourself' This helps you, among other things, to locate your own problem areas and look critically at other sources of technical documentation so that you can learn to pick up on their good and bad points.

The next section of the book concentrates on the actual writing. If you intend using a contract writer or a documentation house, find out if their experience is valid, get them in to see your set-up and so on. Then it's time to look at form and style, illustrations, layout and design, all of which the book covers thoroughly. Professional-looking layout is crucial, according to Marlow.

The last section of the book comprises a number of useful

appendices; a directory of contract writers and documentation houses, lists of bureaux that deal exclusively with technical author recruitment, and finally a glossary of all the technical terms mentioned throughout the book.

The Technical Documentation Handbook is an informative and enjoyable read. It will prove invaluable for anyone involved in the production of technical documentation – whatever the subject – and it reaffirms that technical writing is a skill which needs to be learned if it's to be done well. ■

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BOOK LOOK

Getting rid of those 'L' plates: find out what makes a good technical author and learn to program in C

LEARNING TO PROGRAM IN C

by N Kantaris

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Experienced programmers will tell you that using C brings with it all the advantages of a high-level language combined with the ability to program at assembler level. The C language enables you to write programs that are compact, fast and yet transportable from one type of computer to another.

If you're a hardened programmer, using it won't be too difficult; similarities with other languages will strike you before the differences. But if you're new to programming and want to get into C, a book with the title this one has should kindle a glimmer of hope in your breast.

One thing is for sure: Learning to Program in C is not a book for the total novice despite the title's indications to the contrary. The opening chapter is encouragingly headed 'Language Overview'; it turns out to be both frustrating and baffling. Introducing terminology, the meaning of which is not obvious, with the proviso that full explanations follow later on in the book (as far ahead as Chapter 8 in the case of line editors), seems a little unfair.

On page 3 when talking about variable data types, Kantaris assumes that his readers are totally au fey with floating point numbers and unsigned integers, not to mention unsigned long integers. That, in itself, wouldn't be so bad if there was a glossary at the back of the book to which you could beat a hasty retreat in moments of need, but there isn't one.

Kantaris is eager to stress that C programs are transportable from one computer to another. But it's not clear which machine he is using. The novice might assume, not unreasonably, that he or she is using the same one as Kantaris. It would have been a good idea to explain the differences that can be expected when using different machines.

The layout and design of the book are uninspiring and the style of the writing stodgy in the extreme. Despite the 'problems' set at the end of each chapter, with working solutions at the back, it is unlikely that this book is going to be of much real help to the novice C programmer. At times you get the rather uncomfortable feeling that if you know enough to understand the first chapter, the 'learning' implicit in the title is laughable. Having said that, at just £4.95, it's probably one of the cheapest books around on C. ■

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One of the best books on C was written by the program's developer, Dennis Ritchie, along with Brian Kernighan. It's called 'The C Programming Language' and is a lively as well as an instructive read. It's available in paperback form from Prentice Hall at £24.95.

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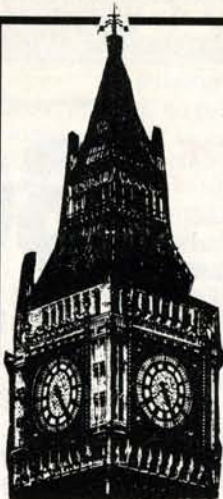
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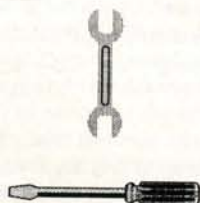
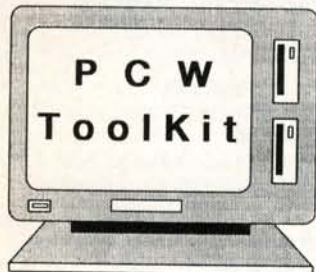


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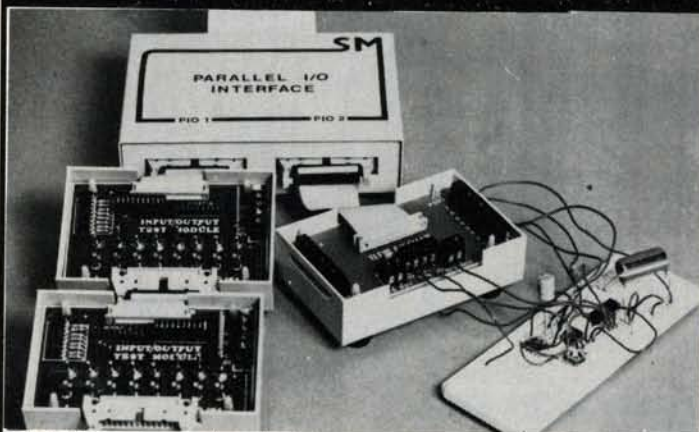
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Welcome, one and all, to the second monthly number of this family periodical. Your warm response to our first has gratified the Editors most excessively. No doubt of it: scattered through the length and breadth of England are thousands of happy devotees of the machine from which our publication takes its name — none of whom would willingly return to the old, wearisome ways, yet most of whom are a little "stumped" by the mechanical intricacies. It is for you that we publish *Remington Plus*.

Without further ado we present our first "Enquire Within Upon Everything" page. Herein readers' queries will be answered monthly by "Aunt Davinia", who seeks to be to you a Counsellor, Guardian, Instructor, Companion and Friend.

"Baffled" — We agree that the pamphlet of instructions supplied with your machine is shamefully deficient. The reason that your letters are difficult to read lies in a point which was not made clear: you are meant to insert a sheet of paper into the typewriter by dint of rotating the knurled knob at the top right. If you do not follow this somewhat technical explanation, you must consult the tradesman who supplied your machine. You will find that the use of paper makes the result far more legible and also less costly to post. (Should you wish us to return the roller carrying your letter, you must remit eighteenpence for carriage.)

"Paterfamilias" — An excellent spelling checker is published by Bowdler & Company, containing none of the terms to which you discreetly allude. Your children may consult it without fear. However, such lexicons do not offer the alternative renditions you require. The "add-on software" of M.Roget provides this facility but includes notions somewhat too sensational for those of tender years.

"lowercase" — This is a frequent enquiry. Although the feature for which you ask was in fact introduced in 1878, it has never in our opinion been adequately documented. Somewhere amongst the keys of your machine — we cannot say where without further information — you should find one carrying the legend [/]Shift[.]. Depress this firmly when typing the first letters of proper names and the opening

words of sentences. With a few weeks' practice you will soon master the trick of releasing this key before the next letter is typed. Space precludes our entering into fuller details, but for our summer number we are preparing a lengthy essay entitled [/]Shift Lock Secrets[.].

"Pro Bono Publico" — Clearly you have been dulling your mind with the childish fantasies of such as M.Jules Verne, until your sense of proportion is quite eroded. The notion that personal typewriters might be driven by some such fantastic means as electricity is sheer nonsense. Only the huge "mainframe" typewriters of commerce, such as that devised by Mr Edison in 1872, could conceivably operate in such a fashion. Are you afraid of honest toil?

"Thrifty" — You should read our pages with more attention. Each issue contains several advertisements for preparations of soot, lamp-black, boot-polish, [/]et cetera[.], supposedly suitable for the "rejuvenation" of ribbons. We cannot recommend any one in particular. Your own efforts with oak-galls and household chemicals are perhaps commendable, but imperfect: the ink emits noxious fumes which made our chambers uninhabitable until your letter was removed by the public hangman. We have forwarded his bill to your address.

"Aspirans" — Certainly not! Under no circumstances should any English author take colonials like Mr Mark Twain as setters of precedent in this respect. We dare say publishers in those uncouth parts are prepared to accept typewritten submissions. In Britain, literary etiquette is unchanged. You may prepare drafts of your work on the machine, but must write it out in "letter quality" script for the publisher. Vellum and quill pens remain optional.

"Fun-Lover" — Yes. Although the Remington is almost exclusively thought of as a serious machine for the use of authors and businesses alone, many games are indeed available. For example, the advertisement from "Diversions and Pastimes Workshop" on page 94 offers a selection which includes "Consequences", "Acrostics", "Double Acrostics" and "Postman's



A page in
the company
of author and
PCW pundit
David Langford

LANGFORD

Knock". Many enthusiasts declare the Remington adaptations of these games to be infinitely superior to the old "manual" versions.

"In Statu Pupillari" — Your tutor or governess has sadly neglected your education. A child of your years should be aware that the typewriter, far from being a new idea, appears in a British Patent as long as ago as 1714. Nor was your letter free from errors of grammar, syntax, layout, punctuation, spelling and diction.

"Blackbeard" — We can take no pleasure in your account of how (no matter with what ingenuity) you have "hacked" the internal mechanisms of Remingtons to effect various claimed improvements. Such tampering is in clear violation of the makers' warranty conditions. We hold it our

duty to prevent such bad and dangerous suggestions from reaching our readers. After taking legal advice we must also return your article on the use of a modified machine to generate "official" identification and thus penetrate the Bank of England's ledger system. The notion is in poor taste.

"Wordsallruntogether" — The key you seek is the very wide one which lies closest to you as you operate the mechanism. Contrary to your somewhat petulant implication, we consider the manufacturers to have labelled this clearly and correctly with a picture of a space.

Aunt Davinia will return with further enlightenment next month.

[ENDS]

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LISTINGS

The Mandelbrot set and a Basic catalogue program

MANDELBROT PLOT

by Brian Aird

When you hear people speak of the beauty of mathematics they are usually referring to a purely cerebral phenomenon, but in the singular case of fractals the beauty is one which we can all appreciate.

Probably the most famous fractal of all is that generated at the edge of the Mandelbrot set, a unique, almost organic series of shapes that plummets, unresolved, to the realms of the infinitely small.

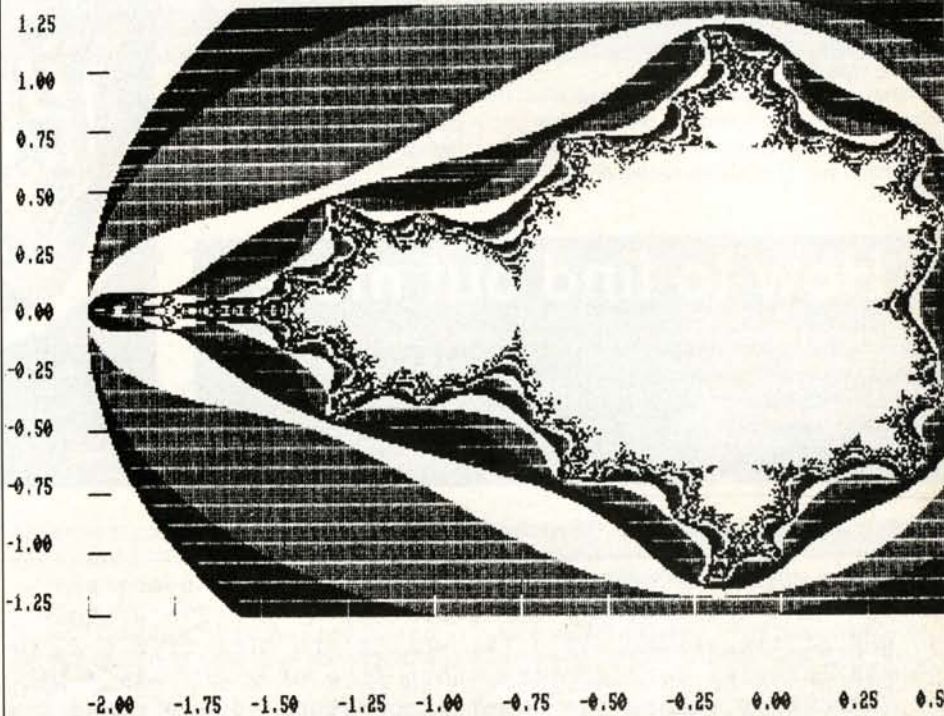
It is precisely this uncertainty at the boundary that provides the fascination of the Mandelbrot set. It somehow defies common sense to believe that no matter how much you magnify the edge (by examining ever smaller areas) it will never resolve into a definite boundary, it will always be possible to magnify the resulting tiny areas still further and produce new, equally complex, patterns.

In fact the limits are imposed not by nature but by the minimum size of number with which our computers can work, and the speed with which they can perform the necessary calculations.

The basic formula used to produce these numbers is extremely simple. The reason it takes so long is that it has to be iterated over and over again to find out whether or not the number belongs to the Mandelbrot set or lies outside it.

For some numbers this takes only a few iterations, for others it can take hundreds of millions of iterations. Since it's necessary to limit the number of iterations performed on any particular point to some reasonable limit (in order to get a result while you're still alive to see it), you can only ever achieve an approximation of the true shapes; however, this is still extremely pretty.

The formula used by Mandelbrot was simple; it's $z = z^2 + c$ which is iterated a certain number of times. If z becomes infinitely large then it isn't a member of the set, whereas if it stays finite then it is. In practise it is found that if z becomes greater than two then it will probably become infinite, so normally $z < 2$ (less than or



As you can see from the picture of the complete set the range of values for the x and y co-ordinates is quite small, and these have to be scaled up to the 720 by 255 of the PCW screen

equal to two) is the limit tested for.

It is near the edge of the set, where an enormous number of iterations are required to decide whether or not a particular point falls within the set that provide the uncertainty, and the patterns. In fact only by performing an infinite number of iterations can it be decided if certain points belong in the set, and clearly there isn't time for an infinite number of calculations so we can never finally define the edge.

Strange equations

Now, you've begun to suspect that there must be something strange about this little equation ($z = z^2 + c$), and there is: both z and c are *complex numbers*. An example of a complex number is the square root of -1 . Since any number multiplied by itself produces a positive number it's hard to write it any other way, and furthermore if you try to resolve the sum $3 + (\text{square root of } -1)$ it's difficult to see how else to write it, and in fact you can't; a complex number thus has to be written in two parts.

In line with this idea the complex number z is treated as $a + jb$, where j is the strange part

(called the *imaginary component*).

By taking a as the x co-ordinate and b as the y co-ordinate we can plot a point on the screen, and to decide what we plot it's necessary to work out the value of z . If this value stays below 2 then we leave the location blank, otherwise we plot to it.

So how do we actually calculate this value? The answer is in geometry. The value we want is the length of a hypotenuse of a right angled triangle with sides $\text{real}(z)$ and $\text{imaginary}(z)$ so we can use Pythagoras' theorem to solve it: $\text{value}(z) = \text{square root}(\text{real}(z)^2 + \text{imaginary}(z)^2)$. As you can see, this calculation is performed in line 260.

How to use the listing

This program makes use of Lawrence Simons' plot and screensave routines. First you need to type in the Mandelbrot listing (call it something like *mandle.bas*) and then the other programs have to be merged with it.

The plot routine is in issue 23 (August 88) and as explained at the time you only need the lines from 50000 onward - don't include the rest or

LISTINGS PLUS

they will overwrite the Mandelbrot listing. The other routine required is also by Lawrence Simons (thanks again Lawrence - we love you) and appeared in issue 28 (January 89) with four missing lines appearing in issue 29 (February 89). You must only use the lines from 54000 onwards and merge it with the rest of the program.

If you don't have these issues, shame on you, contact the Old Barn at Somerton (see the contents page for the address).

Once you have the three parts of the program assembled - make sure you save a complete version before running it - simply type **run** and follow the prompts.

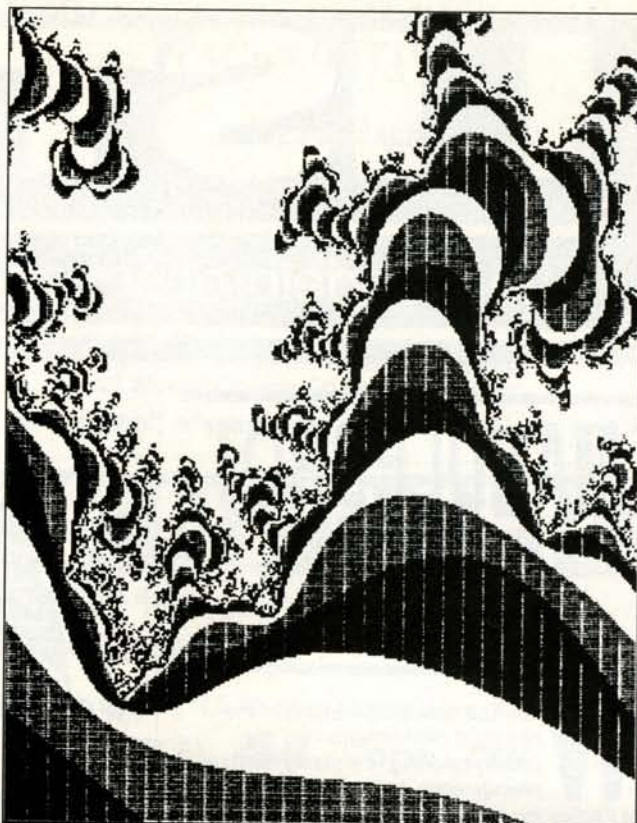
First of all you will be asked if you want to Save or Load. Type in S or L. Obviously you can't load any pictures until you've generated them so type S.

What you are asked for next are two numbers on the x axis and two on the y axis (remember, x is across and y isn't). The range of numbers you can use are shown on the

picture of the complete set and the area thus defined is what will be displayed on the screen.

Once you've provided the numbers you'll be asked for the number of iterations; the bigger this number is the better the detail will be but the longer it will take to draw. The pictures you see here were generated overnight using 40 iterations.

The final piece of information is the name of the file the picture will be saved to. This allows you to build up a library of images of the Mandelbrot set which you can use to brighten up programs and amaze your friends. ■



This picture was generated overnight by examining the Mandelbrot set between coordinates $x = -0.75$ to $x = -0.7$ and $y = +0.25$ to $y = +0.3$ with $T\% = 40$

How to find out more

The Mandelbrot set was discovered by Benoit Mandelbrot, an IBM Fellow at the Thomas J Watson Research Centre.

This listing originated from information in an article in Scientific

American, August 1985 by A K Dewdney.

The recent Byte magazine, November 1988, contains relevant material on building a Mandelbrot engine by Steve Ciarcia.

```
10 REM Mandlebrot numbers:- the set of complex numbers
20 REM that can tolerate the iteration of  $z=z^2+c$  without the number
30 REM of iterations,  $1\% > t\%$ , whilst the size of  $z < 2$ , or  $z^2 < 4$ 
40 REM line 240 is algorithm, note size of  $z^2 = a*a + b*b$ 
50 REM  $c=x+jy$ , where  $j$  = complex operator, -1 and  $x$  and  $y$  are scaled to
60 REM screen coordinates for each pixel.
```

1DE7
2583
1EA1
1994
23D2
16ED

Explanation of the program function.

```
70 GOSUB 54000
80 INPUT "Do you wish to (S)ave or (L)oad the graphics screen ";s$
90 IF s$="S" OR s$="s" OR s$="L" OR s$="l" THEN q=-1
100 IF q<>-1 THEN GOTO 80
110 c1t$=CHR$(27)+"E"+CHR$(27)+"H":
120 setg$=CHR$(27)+"0"+CHR$(27)+"E"+CHR$(27)+"f"
130 setx$=CHR$(27)+"e"+CHR$(27)+"1"+CHR$(27)+"Y"+CHR$(59)+CHR$(32)
```

0602
21B8
139F
0B18
0BF5
0FA2
15AF

Initialising the program. Line 70 calls the routine that sets up the Screensave routines.

```
140 IF UPPER$(s$)<>"S" THEN 350
150 INPUT "X MIN ";xmin:INPUT "X MAX ";xmax
160 INPUT "Y MIN ";ymin:INPUT "Y MAX ";ymax:INPUT "MAX NO OF ITERATIONS ";t%
170 INPUT "What name for screen file ";a$
180 IF FIND$(a$)<>" " THEN PRINT "file already exists":GOTO 170
190 a$=a$+CHR$(0)
200 GOSUB 50000:f%=1:PRINT setg$: REM set up plot routine
```

0C56
15DC
2779
13ED
1C9A
055E
1D37

If you're going to save a screen then it has to be created. This part of the program picks up all the variables and then sets up the plot routines.


```

210 sideX=xmax-xmin:sideY=ymax-ymin: REM scale PCW screen dimensions      297C
220 gapX=sideX/360:x=xmin:gapY=sideY/256:y=ymax:oldi%=0:r%=0:rl%=1      22F7
230 FOR y%=255 TO 0 STEP-1:y=y-gapY                                       1000
240 FOR x%=0 TO 719 STEP 2: x=x+gapX                                       0FDA
250 a=0:b=0:i%=0                                                           0533
260 WHILE i%<=t% AND a*a+b*b<+4:z=a*a-b*b+x:b=2*a*b+y:a=z:i%=i%+1:WEND 1D1C
270 IF i%>t% THEN k=0 ELSE k=i%MOD(3)+1                                    10B6
280 IF k=1 OR k=3 THEN CALL plot (x%,y%,f%)                               122C
290 IF k=3 THEN x1%=x%+1:CALL plot (x1%,y%,f%)                           12CC
300 NEXT x=xmin:NEXT                                                       0C7B
310 CALL scrnsave(a$,e%)                                                  0A96

```

All the actual work is done here. The calculation occurs in the line 260, the scaling to fit the screen is done in line 210. If you've seen colour pictures of the Mandelbrot set you may have wondered how the colours are decided; in fact all that happens is that a colour is assigned to a particular point depending on how many iterations it took to go out of range. The best we can do on the PCW is plot points differently depending on how fast they go out of range. This is done in lines 280 and 290.

```

320 IF e%<>0 THEN PRINT "screen save error - try again":GOTO 340          1EAF
330 WHILE INKEY$="":WEND:PRINT setx$:END 'Wait for a key press           20B2
340 INPUT "type new file name ";a$:a$=a$+CHR$(0):GOTO 310               18D6
350 IF UPPER$(s$)<>"L" THEN END                                          0DAF
360 INPUT "What file do you wish to load ";a$                           15BA
370 a$=a$+CHR$(0)                                                       055C
380 CALL scrnload(a$,e%)                                                 0ACC
390 IF e%<>0 THEN PRINT "file load error - try again ":GOTO 350         1D36
400 GOTO 330                                                             04AF

```

This final section of the program is responsible for actually calling Lawrence Simons screen Load/Save routines

CATALOGUE

by Stephen Cook

This program will be useful to anyone who keeps all their BASIC programs in one place. This program, which is best used in conjunction with a PROFILE.SUB for auto loading, is designed to list all the Basic programs currently on the disc, though it does not list itself.

From the list you can select a program by typing its name and pressing [RETURN] or go back to BASIC by typing QUIT (in lower or upper case) then [RETURN]. Any typing errors are trapped and you are invited to try again. If QUIT is selected the screen is cleared, the cursor reinstated and you are left at the Basic prompt.

Save the listing as CATALOG.BAS. Until you get it going leave the OPTION RUN out of line 10 as it disables the STOP key.

Resave all the programs you want listed on 'Catalogue' using the following pattern:

SAVE "NAME.... RETURN.(3 spaces!)

Remember to erase the original files later, to save disc space. Alternatively, you could leave your programs as they are and simply edit line 70 of 'Catalogue' to read:

70 FILES""*.BAS"

However, this makes the screen look very crowded as the suffix BAS will be listed next to each program. You would also need to edit line

120 to take account of this (since it assumes three spaces). 'Catalogue' will list itself with this scheme.

Use PIP from the CP/M disc to put SUBMIT.COM (again from the CP/M disc) on the disc containing 'Catalogue' and your BASIC programs. Then use RPED (from the CP/M disc) to write a file called PROFILE.SUB onto this disc. PROFILE.SUB should contain only the words:

BASIC CATALOG.BAS

This done, your disc should automatically load BASIC and 'Catalogue' whenever you use it.

Remember to save any future BASIC program as follows:

SAVE"PROGNAME. " RETURN

Note that the filetype is three spaces, with this file type they will be included automatically in the menu the next time that 'Catalogue' is run.

At the moment there is space to list 48 programs on the screen. To make your programs return you to the catalogue program finish them with the line **RUN "CATALOG.BAS"**.

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Select program or type QUIT to exit to Basic

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------------------	--------------------	---------------	--------------------	---------------------	---------------------

Which program would you like?
Type the name or QUIT and press [RETURN].

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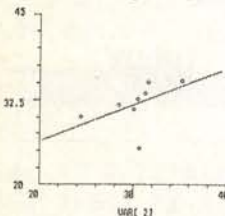
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```

10 OPTION RUN:PRINT CHR$(27)+"1"+CHR$(27)+"H"+CHR$(27)+"E"          17C4
20 DEF FNat$(x,y)=CHR$(27)+"Y"+CHR$(32+y)+CHR$(32+x):GOSUB 210        1870
30 PRINT CHR$(27)+"f":PRINT FNat$(32,2)"## Basic Disc Catalogue  ##"  1B5F
40 PRINT FNat$(40,3)"For 8000 Plus"                                     0F36
50 PRINT FNat$(23,7)"Select program or type QUIT to exit to Basic"     2229
60 PRINT:PRINT:PRINT                                                    0D2D
70 FILES"*.  "                                                           0465
80 PRINT FNat$(31,20)"Which program would you like?"                   18F6
90 PRINT FNat$(25,22)"Type the name or QUIT and press [RETURN]."       1FA1
100 PRINT:PRINT:PRINT                                                    0DB0
110 INPUT " Select :",a$:IF UPPER$(a$)="QUIT" THEN 200 ELSE 120        19C1
120 a$=a$+" "                                                            02C4
130 FOR d=30 TO 59:PRINT FNat$(d,26);".":NEXT d                        156B

```

The first part of this listing sets up the User Defined Function for screen handling and then goes on to ask for your requirements. Notice the use of FILES to obtain the directory listing

```

140 PRINT FNat$(61,26);"Wait...Loading ";a$                             12A6
150 ON ERROR GOTO 160:RUN a$                                             0D47
160 FOR z=1 TO 1000:NEXT z:FOR d=30 TO 59:PRINT FNat$(d,26);" ":NEXT d 1E80
170 FOR d=30 TO 59:PRINT FNat$(d,26);".":NEXT d                         1577
180 PRINT FNat$(61,26) "Name not found, please check."                 17F6
190 FOR z=1 TO 3000:NEXT z:RESUME 10                                     1159
200 PRINT CHR$(27)+"H";CHR$(27)+"E";CHR$(27)+"e":NEW                  1200
210 PRINT:PRINT:PRINT:PRINT CHR$(150);STRING$(88,CHR$(154));CHR$(156) 21BA
220 PRINT CHR$(149);TAB(90);CHR$(149)                                  0ECA
230 PRINT CHR$(149);TAB(90);CHR$(149):PRINT CHR$(147);STRING$(88,CHR$(154));CHR$(153)
                                                                 2386
240 PRINT TAB(21);CHR$(134);STRING$(48,CHR$(138));CHR$(140)           16FA
250 PRINT TAB(21);CHR$(133);TAB(70);CHR$(133):PRINT TAB(21);CHR$(133);TAB(70);CHR$(133)

```

The central section simply cycles around waiting for you to make up your mind as to which file you want to run. The use of RESUME here allows the program to remain in control if you type a non-existent filename

```

260 PRINT TAB(21);CHR$(131);STRING$(48,CHR$(138));CHR$(137)          2279
270 FOR z=1 TO 10:PRINT:NEXT z                                          16F4
280 PRINT TAB(21);CHR$(134);STRING$(48,CHR$(138));CHR$(140)          0EB1
290 PRINT TAB(21);CHR$(133);TAB(70);CHR$(133):PRINT TAB(21);CHR$(133);TAB(70);CHR$(133)
                                                                 1706
300 PRINT TAB(21);CHR$(133);TAB(70)CHR$(133)                           2285
310 PRINT TAB(21);CHR$(131);STRING$(48,CHR$(138));CHR$(137)          113A
320 PRINT FNat$(0,28) CHR$(150);STRING$(28,CHR$(154));CHR$(156)       16E7
330 PRINT FNat$(60,28) CHR$(150);STRING$(28,CHR$(154));CHR$(156)     18ED
340 PRINT FNat$(29,29) CHR$(149):PRINT FNat$(60,29) CHR$(149)        1921
350 PRINT FNat$(0,30) CHR$(147);STRING$(28,CHR$(154));CHR$(153)       1773
360 PRINT FNat$(60,29) CHR$(147);STRING$(28,CHR$(154));CHR$(153):RETURN 18F1
                                                                 1DD1

```

This final section actually holds all the information necessary to set up the screen display. This was generated using DESIGNER from issue 23 (August '88).

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PCW REPAIR	Min Charge	Max Charge
Faulty PCW8256/512 Keyboard.....	£15.00	£65.00
Faulty PCW9512 Keyboard.....	£15.00	£95.00
Faulty PCW8256/512 Printer.....	£18.00	£80.00
Faulty PCW9512 Printer.....	£25.00	£115.00
Faulty PCW8256/512 Monitor.....	£30.00	£150.00
Faulty PCW9512 Monitor.....	£30.00	£150.00
Faulty I Don't Know what it is? (sending you the lot!)	£50.00	£185.00

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ORDER CODE	DESCRIPTION	EXCHANGE PRICE	PURCHASE PRICE
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271200	PCW8256/512 Complete Working Printer.....	£135.00	
277200	PCW9512 Complete Working Printer.....	£185.00	
271300	PCW8256 Complete Working Monitor.....	£145.00	
271301	PCW9512 Complete Working Monitor.....	£245.00	
277300	PCW9512 Complete Working Monitor.....	£255.00	

● AMSTRAD PCW CIRCUIT BOARDS:-

ORDER CODE	DESCRIPTION	EXCHANGE PRICE	PURCHASE PRICE
710171	PCW8256 PCB, CPU	£66.95	£86.95
710181	PCW8512 PCB, CPU	£75.95	£93.75
700771	PCW9512 PCB, CPU	£80.00	£97.95
111171	PCW8256/512 PCB, Monitor	£48.95	£74.25
600771	PCW9512 PCB, Monitor	£48.95	£74.25
511171	PCW8256/512 PCB, Keyboard	£21.95	£28.95
500771	PCW9512 PCB, Keyboard	£21.95	£28.95
831171	PCW8256/512 PCB, Printer	£15.95	£27.95
800771	PCW9512 PCB, Printer	£15.95	£27.95

● AMSTRAD PCW DISC DRIVES:-

ORDER CODE	DESCRIPTION	EXCHANGE PRICE ONLY
500091	PCW8256/512 'A' Disc Drive (Real Amstrad!)	£64.75
422171	PCW8512 'B' Disc Drive (Real Amstrad!)	£72.75
410771	PCW9512 'B' Disc Drive (Real Amstrad!)	£92.75

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ORDER CODE	DESCRIPTION	EXCHANGE PRICE	PURCHASE PRICE
210771	PCW9512 Printer Mechanism	£79.95	£99.95
721171	PCW8256/512 Printer Mechanism	£39.95	£61.95
681171	PCW8256/512 Printer Head		£36.25
761171	PCW8256/512 Motor Head Drive		£14.25
321171	PCW8256/512 Paper Holder (Black)		£2.25
121171	PCW8256/512 Paper Tray (Gray)		£8.75
432171	PCW8256/512 Printer Head Lid (Black)		£5.55
810771	PCW9512 Tractor Feed Unit.....		£22.95
112171	PCW8256/512 Tractor Feed Unit		£15.75
821171	PCW8256/512 24 Volt DC Cable		£5.25
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825611	PCW8256/512 Service Manual	£12.00
951211	PCW9512 Service Manual	£18.00
310171	PCW8256/512 On/off Power Switch	£5.25

Please Add VAT To All Prices.

BREAK THE PCW MEMORY BARRIER

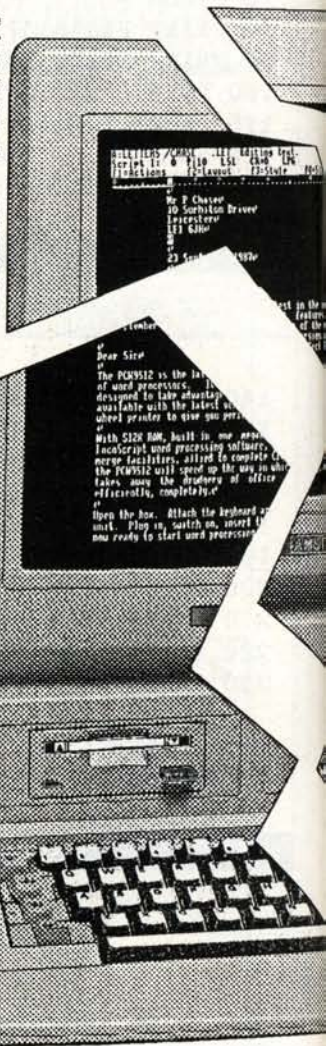
The phone has never stopped ringing, with PCW users begging us to give the extra power needed to exceed their current PCW's processing limitations. Firstly We've expanded the memory and in the near future we will improve the disc storage space.

Our New "512k RAMDRIVE" adds an extra 512K of memory to your Locoscript 2 or CP/M Drive M: (Memory disc drive). This means PCW8512 and PCW9512 owners get a massive 880K Drive M: where as at a flick of a switch on the RAMDRIVE PCW8256 owners get a mere 624K Drive M:

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3) 512K RAMDRIVE PACK just plugs in!
Simply plug the PACK into the back of your PCW. However we feel this is not as effective as fitting inside your PCW, because it can shake loose.

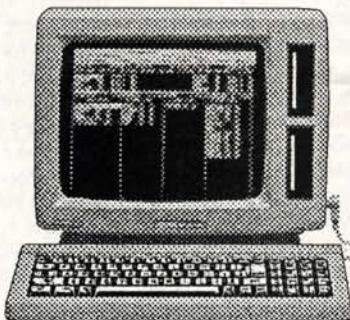
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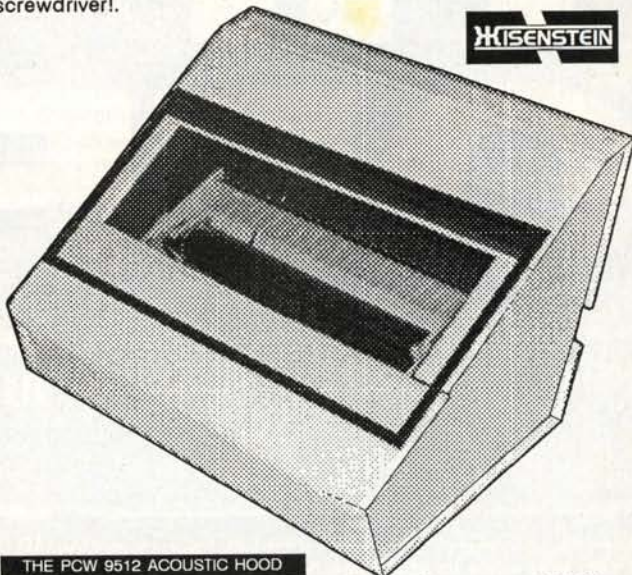
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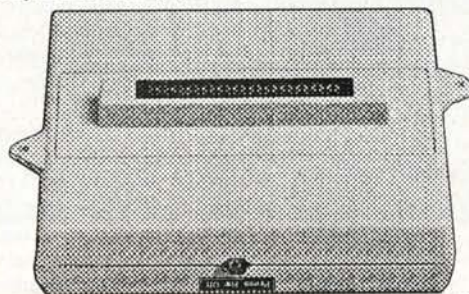
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Fitting a Battery Back Pack to your PCW is like taking out insurance, because if the mains power should be turned off or just drop for a fraction of a second while you are typing. The batteries in the back pack stop charging and keep your PCW memory alive. Thus saving your hard typed work in memory. Also built into the Battery Back Pack is a beeper which beeps for a few seconds to tell you that the mains power has gone! After all you could just be turning your PCW OFF!



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TIP OFFS

Thinking of upgrading your PCW skills? Here's a tip

This month we expand the ever popular Tipoffs section to include Question Time. Not only can you write in and pass on those hard won tips but you can also write in and ask for the tips you'd like to see. Between us and our software savants we hope to make Tipoffs indisputably the best source of information in the PCW world.

The best tips can still earn up to £30 (though, like the Arabs we prefer to buy our salt a bit here and a bit there) and we may even pay for really expert help on Question Time. So send those tips and claims to fame to Tipoffs, 4 Queen St, Bath, BA1 1EJ.

This month the winners are A Coxhead, Gerard Moate and John Jenkins for unprotecting a program, helping publishers and improving Mini Office.

Publisher's pal

Anyone contributing to local magazines will know that A5 is the preferred format. This usually involves you in printing to an A4 or continuous sheet and then cutting out the resulting artwork before pasting it up sideways onto another A5 sheet and either photocopying the result or using it to prepare heat stencils.

The problem with this is that it isn't always obvious where the corners of the cut out sections are. This results in work being pasted up out of line or even crooked thus spoiling the final, finished result.

One way that professionals get around this problem is with the use of corner marks which indicate the actual extent of an A5 page when it is printed to the A4 or continuous paper.

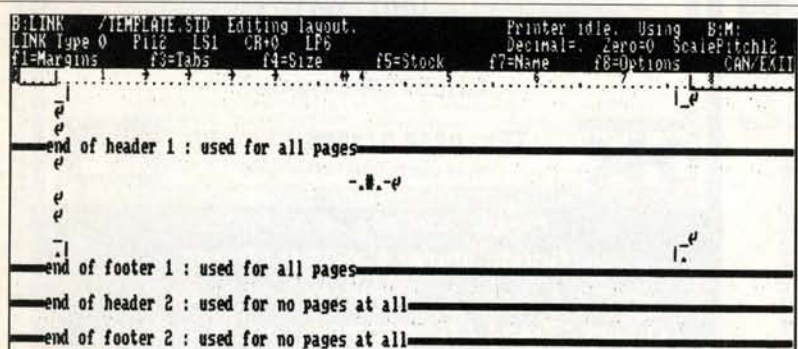
To get these corner marking automatically using LocoScript you need to create a document called TEMPLATE.STD for the group where you will keep all the magazine work. First press [f1] and select Document Setup, then press [f2] and select Change layout. The margins of the header and footer zones should be set on 0.5 and 7.8. In fact any two positions 7.3 apart will do. This is assuming the default scale pitch of 12

On the first line of the header type an underline (_) followed by a vertical bar (|) - this is [EXTRA]+. - see the key assignments in the manual for details. Now press [+]RA to use Right Align. Type another vertical bar followed by an underline and press [RETURN] to complete that line.

Assuming a page body of 43 lines, press [RETURN] to leave a line space between the last word of your page and the page number you will put in later. Two more [RETURN]s need to be put in and then type an underline, [+]RA, underline and [RETURN]. On the last line type a space, vertical bar, [+]RA, vertical bar, space.

To check that this has worked properly create a document using the new TEMPLATE.STD, it only needs a single word, and print it out. A sheet of A4 paper folded in half should fit exactly between the marks.

Gerard Moate
Charlesworthe
Derbyshire



Mini Office kludge No.76

In the February issue you confidently state that "the worst thing..." with Mini Office's search and replace function "is that you can't replace things with nothing". Well you only get five out of ten for that one since you can actually.

Suppose you want to take out all the underlinings; select the Search and replace option and at the prompt enter search string type [SHIFT]/[ALT]/[U]. When prompted for the Replace string type [ALT]/[U] which effectively turns off the underlining before it's even turned on, so out it comes. For this to work the cursor has to be at the top of the document since searching is only carried out forward through the document.

Since embedded codes don't take up page space altering them in this way won't change any other aspect of the page layout. (but it still didn't replace something with nothing did it? - ed).

Bob Grant
Melton Mowbray
Leics

Value added

For some reason the function VAL in Basic is occasionally rejected if used in the form

POKE nn,VAL("&H"+a\$a)

If you get a syntax error in a line with this use of the VAL function the answer is to create a new string variable and do the string concatenation before the POKE. In the example above you would make the line:

aa\$="&H"+a\$a:POKE nn,VAL(aa\$)

This will cure the problem immediately

Donald Sawyer
London

Running wild

If you are a PCW owner with two printers then you will have come up against the problem of switching printers from within a Basic Program; it isn't possible.

However, users of CP Software's Lightning Basic Plus now have a RUN # command which allows them to run a COM program from within a Basic program. Now it is possible to have lines such as:

100 IF x=1 RUN # "DEVICE

LST:=SIO"

110 IF x=0 RUN # "DEVICE

LST:=LPT"

Line 100 will switch the printer output to the RS232 interface and whatever printer you have added

(a dot matrix if you have a 9512 or a daisy wheel if you have one of the 8000 machines) while line 110 will switch output back to the standard printer supplied with the machine.

Chris Whittington
Burford
Oxfordshire

Initial problems

Datestamped files can be very useful, but the utility to do it 'isn't covered any further in the manual'. The utility in question is INITDIR.COM, which you will find on side 3 of your master disc, but using it isn't as straightforward as you might think.

Having Masterfile database files on disc which are frequently updated, it seemed a good idea to date stamp them to keep track of changes more efficiently. Using INITDIR, I reformatted the directory of my data disc (just type `initdir a:` to reformat the directory of the disc in A).

Once the disc was initialised SET was run to make use of the new directory structure (SET [access=on update=on]). This worked fine but the Masterfile directory now showed an extra file called LABEL which hadn't been there before. This appeared to be the default disc name.

It seemed a good idea, therefore, to name the disc more meaningfully. Now the problem; after typing in **SET b:[timestamp.d09]** the message **Error – only first 11 characters of label name used** appears. Reducing the name and typing **SET b:[timestamp.d9]** produced the filename **TIMESTAMP.D9].** The answer is to use no closing bracket; now everything is okay

Henning Brondum-Neilson
Rannoch Station
Perthshire

ComPuting by Mail

In the READ section of the 8000 Plus Software Collection (great fun) you say "If you want VDO2 to obey the keyboard just like LocoScript simply run the sub file. You will need SETKEYS.COM and the file VDO2.KEY along with SUBMIT.COM on the same disk." I Cry. I 'simply' don't know how to start. Where can idiots find out how to do such marvellous things?

G I F Tingay
Wimbledon, London

The PCW keyboard doesn't actually produce the codes for the keys marked on top, instead it

returns various largely irrelevant numbers depending on whether the keys with or without [SHIFT] [ALT] or [EXTRA] are pressed.

What happens then is that these numbers are interpreted according to various tables held in the machine. These tables can be altered by software (wordprocessors for example) or by the utility SETKEYS. This utility takes a simple Ascii file as its data and there is a good example on side 2 of the master discs called KEYS.WP that sets the keyboard up for WordStar. There is another for the Logo language on side 4.

To use one of these automatically you need SETKEYS, SUBMIT and the file containing the data on your startup disc with a PROFILE.SUB file containing the line SETKEYS FILENAME where filename is the file holding the key data. In the case of VDO2 the line would be SETKEYS VDO2 KEY

Printer problems

We are using an Amstrad PCW9512s with a Citizen HQP45 24-pin dot matrix printer and have recently ventured into desktop publishing.

On first using the Citizen with LocoScript 2, we found that it gave a line pitch of 5 instead of 6, and 7 instead of 8. This has now been rectified thanks to Locomotive Software's 24-pin printer driver disc.

However, the problem persists with other programs, notably The Desktop Publisher and Stop Press. As you will appreciate, this means that we are getting distorted images and pages too long to fit onto the intended A4 paper.

Mrs Susan Hector
Freshwater, Isle of Wight

Some 24 pin printers have a 9 pin emulation mode, some don't, contact your supplier and find out if yours does.

If it doesn't then there is no hope as far as the desktop publishing packages go since the authors of both those mentioned are not planning to support 24 pin printers. Interestingly enough the next release of Mini Office will support 24 pin printers.

Labels again!

Printing labels seems to occupy far more thought than such tiny items warrant. However, Mini Office is already set up to make this a relatively straightforward operation.

Your addresses need to be in the Mini Office database; once

Mini Office kludge No. 103

One of the (very few) irritations with the Mini Office database is that it won't repeat a record field by field (allowing you to alter only the fields that have changed). For example, if you're cataloguing your Elvis record collection you would have 30 records for Elvis: Thirty Golden Greats. These records would all be the same apart from one or two fields – like the song title and length.

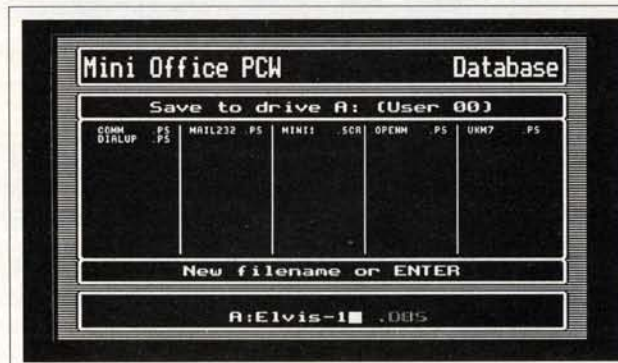
The solution is to type only the first entry into your database and include only the information that will be the same in every record; name of artist, name of album, date released and so on – leave the song length and song name field blank.

When you've completed the record press [ENTER] then [EXIT].
the next thing is to press [M] to mark the record (making certain there



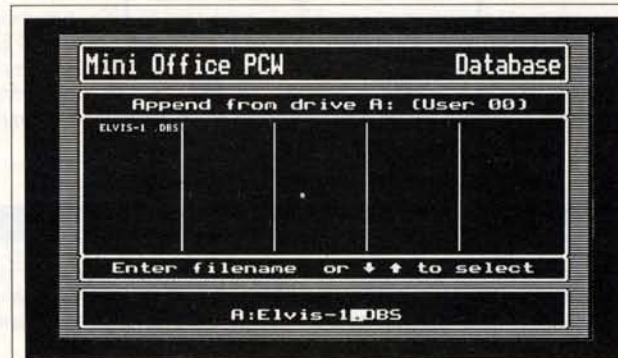
are no other marked records in the database) and then [EXIT] again to get to the Load/Save screen. Select Save marked records and choose a name to save the record under – not the default name offered since that is the name of the original database (how about Elvis-1.dbs).

You now have your original database plus a new database containing just the one record. Press [A] for Append database and



when prompted for the name of the database to to be used move the cursor onto your new database (ELVIS.DBS). This will be copied to the end of your first database giving you two identical records. Repeat this process as many times as required before pressing [EXIT] and choosing Edit data. You can now go back and fill in all the empty fields in the new records you've added.

John Jenkins
Aberystwyth



TIP OFFS

there simply select Print Labels. If the defaults aren't suitable then select Print Data from the menu and alter them.

Chris Baldwin
Bracknell
Age 13

Able labels

Is LocoScript capable of being set up to do a continuous print of say 100 address labels? I ask because I cannot get an exact line-up (only an approximate correspondence between the program and the labels).

I have listed the addresses (about 20 so far) in Group 5 of one of my discs. The addresses are of five or six lines. I originally set up the paper type for 1 1/2 labels as follows: Height 9; top and bottom gap of 1, thereby giving me scope for 7 lines of address. I forced the page break at the end of the address. I did a draft on scrap paper and was initially delighted with the result. Each address was exactly 1 1/2 apart. So far so good.

I Purchased a roll of 1 1/2 Labels – 3 1/2 X 1 1/2 – but I realised that no account had been taken of the gap between the labels. The label itself is 1 1/2. Please could you tell me if I am

using the appropriate labels?

J H Brown
Crediton, Devon

Tractor feed labels (you don't say if you are using these) which have

the little holes down the side, should be 1 1/2 from the top of one label to the top of the next. You have the wrong labels. Using the correct kind you should have no problems printing out any number

Loads of Locofile

Using the Locomail loop commands for extracting the data from a LocoFile database and putting it back into a LocoMail document (perhaps for a large number of alterations) can save you work.

This is an update to the tip Fraught files in the March issue and affects only the actual LocoMail document used to do the job. Instead of having to use a page for every record only one page is now required and the loop creates all the rest as it goes

along.

```
(+Mail)$="Name":test=1:repeat="(Mail)
Name(-Mail)
(+Mail)Address(-Mail);(+Mail)Phone(-Mail)[END OF
PAGE]
(+Mail)$+(-Mail)"(-Mail)
(+Mail)%repeat@test(-Mail)
```

Timothy Bentinck
Islington, London

```
B:PERSONAL/DOCUMENT.000 Editing text. Printer idle. Using B:M:
Layout 1 P112 L51 CR+0 LP6 Page 1 line 1/54
f1=Actions f2=Layout f3=Style f4=Size f5=Page f7=Spell f8=Options EXIT
(Mail)$="Name":test=1:repeat="(Mail)
Name(-Mail)
(+Mail)Address(-Mail);(+Mail)Phone(-Mail)
(Mail)$+(-Mail)"(-Mail)
(+Mail)%repeat@test(-Mail)
```

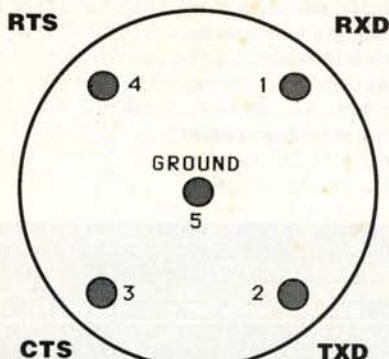
Talking teachers

We teachers who wear out our PCW drives and printers preparing reports at home could save a bit if we could transfer files to the BBCs at school. Could you advise on the peripherals and programs required to transfer Ascii documents between the PCW and the BBC?

Tim Flinn
Ninewells
Dundee

Connecting computers over RS232 lines is fraught with problems since the RS232 standard is far from being universally observed. As luck would have it the PCW comes very close to the ideal, but the BBC certainly does not. It implements a variant of RS232 called RS423 and uses a five pin DIN connector to do it – this is very irritating.

Looking at the pinouts on the back of the BBC they should be as shown below, I don't have the manual to confirm this but if you do it is on page 504.



Looking straight at the pinouts on the back of the BBC computer,

In principle what has to be done is to connect Data in to Data out and Clear to Send to Clear to Recieve for each machine with the Ground lines connected together. Connect the pins as numbered on the PCW

end to those as numbered on the diagram above.

PCW ----- BBC

2 ----- 1

3 ----- 2

4 ----- 3

5 ----- 4

7 ----- 5

This basic cable should work but if it doesn't you may need to connect some extra pins together on the PCW side. These are the handshaking lines 6 and 20. Try connecting them together inside the connector at the PCW end. Without having a BBC handy this is as far as I can go.

To make the cable up you will need a female 25 pin D type connector (on which the pins will be numbered) and the 5 pin DIN plug plus some shielded cable with at last 4 wires in it. All of this can be obtained from any electronics hobbyist supplier for under £5.

Once connected both machines need to agree baud rates and data format. Use SETSIO to set the PCW end with:

SETSIO 1200, PARITY NONE, HANDSHAKE OFF, STOP 1, BITS 8
There is no need to set the framing for the BBC as it uses the default RS432 convention of 1 start bit, 8 data bits and 1 stop bit but you will have to set the rest of the parameters on the BBC using the *FX commands thus:

*FX7,4 – sets receive rate to 1200

*FX8,4 – sets transmit rate to 1200

*FX3,7 – sends characters to the RS423

*FX2,1 – get characters from RS432

What happens next is the interesting bit and depends on the software you intend using. If you're using PIP from the PCW end then simply follow the instructions in the manual for sending a file to the RS232 or receiving one from there (if you've got this far then reading the manual will hold no terrors).

To test the cable go into the View command screen on the BBC and type *FX2,1 and press ESC which should enable input from the RS432. At the PCW end type PIP CEN:=CON: which will send anything typed on the keyboard to the RS232 port. Whatever you type on the PCW should now appear on the BBC screen and will be accepted as if it were keyboard input to View.

For best results you really need a comms package on both machines. For text files Mail232 would be adequate on the PCW and View can be used exclusively on the BBC.

Unprotect and survive

A protected Basic program can be a source of intense annoyance, especially when it comes time to alter it. Protected programs are encrypted when saved so that examining them will do little good; however, to run the program Basic has first to unencrypt it; unfortunately this doesn't help you since SAVE and LIST are then disabled.

The following Basic listing will produce a copy of the unencrypted program, saving it to a new file which can be listed and saved as normal.

```
65500 PRINT "unlocking as M:new.bas"
65501 REM (c) A. Coxhead 1987
65502 ptr=6:proglen=0:lineaddr=31382
65503 OPEN "R",1,"M:new.bas",1
65504 FIELD 1,1 AS f$
65505 linelen=PEEK(lineaddr)+PEEK(lineaddr+1)*256
65506 linenum=PEEK(lineaddr+2)+PEEK(lineaddr+3)*256
65507 IF linenum=65500! GOTO 65520
65508 PRINT linenum
65509 FOR i=1 TO linelen
65510 LSET f$=CHR$(PEEK(lineaddr+i-1))
65511 PUT 1,ptr
65512 ptr=ptr+1
65513 NEXT i
65514 lineaddr=lineaddr+linelen
65515 proglen=proglen+linelen
65516 GOTO 65505
65517 :
65520 LSET f$=CHR$(252):PUT 1,1:REM write header bytes
65521 LSET f$=CHR$(4):PUT 1,2
65522 LSET f$=CHR$(0):PUT 1,3
65523 p$=MKI$(proglen+2):LSET f$=p$:PUT 1,4
65524 LSET f$=RIGHT$(p$,1):PUT 1,5
```

It may be of interest that the file header of an unprotected program is five bytes. In an unprotected file the first three are FC, 04, 00. In a protected file they will be FC, 04, 01. The next two bytes give the file length. Programs are loaded by Basic at 31382 (H7A96) on the early 8000 series machines but the 9512 loads them at 31523 (H7623). If the listing doesn't work on your PCW try changing the number in line 65502 to 31523 and it should work.

Each program line begins with two bytes that give the line length (in hex most significant byte first) followed by two bytes for the line number in the same format.

To use this program first load Basic, then load the program you wish to unprotect. Now MERGE the unprotect program with it and finally type GOTO 65500.

The unprotect program will print the line numbers as it goes to show that it is working; when this stops you will have a new file on M called NEW.BAS which consists of an unprotected copy of the file you started with.

The second problem is caused by no longer having a copy of SuperCalc on your master disc. I can only assume that instead of copying the program you have moved it instead. Copy the file SC2.COM back onto your master disc immediately.

Classic problem

Would you be kind enough to explain (1) how you get the 4-digit hex numbers to appear at the extreme right of each line and (2) if, having learned the knack, my hex numbers are different from those listed does it mean that I have as usual entered the line incorrectly?

Finally, in February's 'Spiro' and in March's 'Basically Good' (p.47) several program lines are inset 3 spaces. What is the significance of this? I have reached about Hour 5 of '30 Hour Basic' so if the answer to the latter question is above this level please refrain from answering it - I would not want you to heap Pelion upon Ossa.

J S Rickards
Blackpool, Lancs

The four figure Hex numbers are generated by the program CHECK2 printed in the November 1988 issue of the magazine. They are no more than a checksum which tell you if your line is the same as our line. For them to work the line must be exactly the

same including spaces and REM statements - no alterations.

However, if you don't want to worry about them there isn't any need to; just make sure that you don't type them in with the listing, they aren't a part of it.

The lines are inset in some programs to show that they are part of a WHILE WEND loop or a FOR NEXT loop: it simply makes things clearer when trying to understand the logic of the program.

And as for references to Virgil - Felix qui potuit rerum cognoscere causus (happy he, who has availed to read the causes of things).

Brazen effrontery

I am getting pretty frustrated with LocoScript 2, although this is my fault. The problem is that I have no manual, as my disc is copied. Everyone I know also has copied discs, and so I cannot borrow one.

The conversion from LocoScript 1 to 2 is very simple and can easily be done manual-less until you get to some of version 2.16's special features, like the 16 user-definable characters and the Sans Serif font. Try as I might, with every conceivable menu, pressing [-] and [+], EXIT, CAN, I get nowhere with either of them. When I saw last month's 'TipOffs' feature on converting fonts between 'Script 1 and 2 I thought my problems were over in that department, but no. I cannot get one of the menus you illustrated, showing three choices of Standard PS, Sans PS and Sans 12. Help!

Simon Openshaw,
Chichester, West Sussex

No. I had some difficulty believing this letter. All right, not everyone takes software piracy as seriously as software houses but it is still thieving. You wouldn't steal a Porsche and then write in to Performance Car, boasting about the fact and asking for advice on tuning it, would you? Perhaps you would. Perhaps it's the people you mix with.

Required reading

I have recently acquired a PCW9512 as a much needed upgrade from my previous home computer (which shall remain nameless to protect the innocents from embarrassment).

What I want to know is how to get hold of a decent reference manual explaining the internal

workings & memory map of the 9512, which Machine Code book you would recommend for the beginner-hobbyist level and what books or software packages exist which will allow me to use graphics facilities of GSX without being reduced to a quivering nervous wreck.

A Macklin
Bishopstone, Hereford

There is no single complete source of information. I would recommend the following for a serious case of curiosity: The Amstrad CP/M Plus by A. Clarke and D Powys-Lybbe. MML systems, 11 Sun St, London EC2 PCW Machine Code by Michael Keys. Spa Associates, Spa Croft, Clifford Rd, Boston Spa, LS23 6DB

As for GSX, although it works it is slow, cumbersome and unfriendly. The original idea was that other machines would support it and your applications would be portable - this hasn't happened. Worse, Digital Research never finished writing it and no good documentation exists. Avoid it completely and get CP softwares All You Ever Wanted to Know About Graphics The Universe and Everything. Tel 0993 82 3463

Simplex problem

I have a CTN Shop along with a sub Post Office. In one of the trade magazines an accounts programme, Micro-Simplex, is being advertised at £99.95. I do not see it in your Good Software File. Is it no good though as you have not tested it?

I would like to purchase an accounts programme but would like some information on the Micro-Simplex. The address is Micro Retailer Systems, 84 Mill Street, Macclesfield, Cheshire, SK11 6NR.
Jim Hamilton
Fairhill, Hamilton

The Micro Simplex package is an accounting system specifically aimed at retailers and has been available for longer than the PCW - some seven years in fact. Micro Retailer Systems will send you a demonstration video if you are a retailer and ask them nicely.

Reviewing accounts packages needs someone knowledgeable who is willing to spend a considerable amount of time with them but we are hoping to business software in more detail in the future.



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A neat book; exactly what PCW owners need to get started, and it won't cost you an arm and a leg!
-Personal Computer World.

I recommend it. -Rex Last.

A detailed guide; very informative and helpful.
Good value. -Amstrad PCW Magazine.



Readers all over U.K. and Europe agree.
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crammed section dedicated to **each** of the main computers.

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New Computer Express goes on sale every Thursday in all leading newsagents. In case of difficulty you can get hold of the latest issue by sending a cheque for 75p (inc P&P) to Express Copies, Future Publishing Ltd, Somerton, Somerset TA11 7PY.

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▲ 'Just some of the fonts available on AMS' Stop Press'

Desktop publishing – doing page makeup on your computer instead of the old cut-and-paste method – is the boom area of home computing. All the national dailies are switching over to DTP methods – and so are thousands of PCW owners, to produce newsletters and flyers.

Want to try your hand? The best developed DTP package for the Amstrad PCW range is now available from Future Publishing at an all-in price of £74.99. Stop Press's incredibly versatile and powerful software plus mouse will turn your PCW into a DTP machine.

The Swiss-made mouse is probably the best currently available and offers high resolution movement all over the screen. The software makes the best possible use of this sensitivity, featuring as it does a wide range of DTP facilities which would probably cost three times as much on higher-priced computers.

Just a few of the features are: -

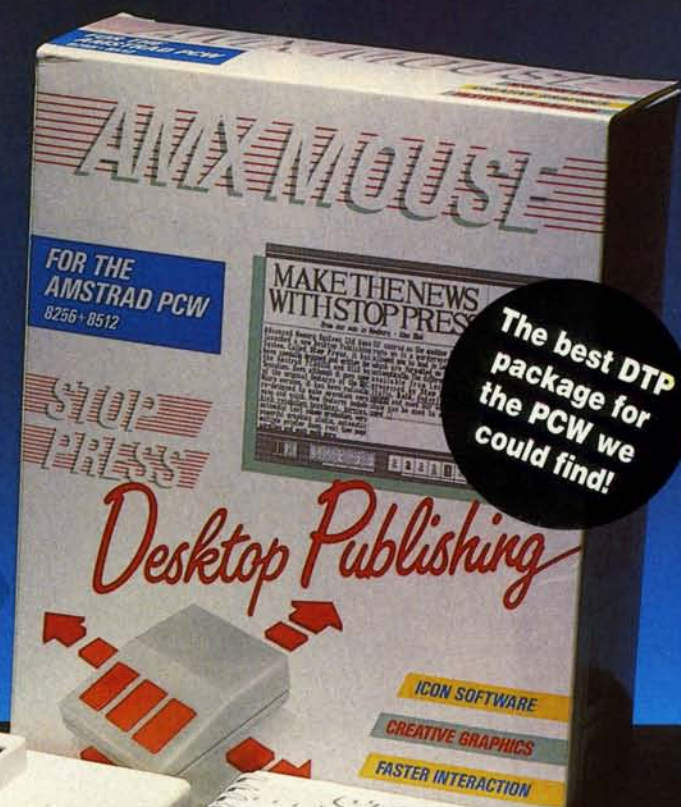
- **14** different fonts supplied
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- Prints up to **108 pages** in one go
- **Shape drawing** includes triangles, squares, cubes, circles and ellipses
- Compatible with **digitised pictures** from MasterScan, Electric Studio and the Rombo digitiser
- **9512 compatible** using an Epson compatible dot matrix printer

Altogether, this is a superb way of getting to grips with DTP. We don't expect to offer any other DTP package through these pages again, because we've held back until we were absolutely sure that this was the best deal. So here's your chance to get going.

Save £15 on the manufacturer's recommended retail price by placing an order with our mail order department (telephone 0458 74011)!

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THE GOOD SOFTWARE FILE

SPREADSHEETS • GRAPHICS

FIRST CALC

£29.95 • Minerva Systems • 0392 37756

Touted as a quick and simple to use program for the beginner, this is nevertheless quite a powerful spreadsheet, with a large capacity, ability to replicate formulae, export etc. Really it's not vastly more user-friendly than the rest but a good value package all the same.

PLUSES • MINUSES

- ▲ A lot of program for the money
- ▲ Good tutorials with demo files
- ▲ Simple to use but reasonably sophisticated
- ▼ Not much easier to use than more powerful packages

POCKET CALCSTAR

£39.95 • Davis Rubin Associates • 0386 841181

A fairly traditional spreadsheet but with a few surprising features. It's not particularly large or fast, but is attractively priced and has all the basic functions. Can form part of an integrated system with the other Pocket products. A safe buy for the first-time user, and the documentation is up to the usual high MicroPro standards.

PLUSES • MINUSES

- ▲ A lot of program for the money
- ▲ Good tutorials with demo files
- ▲ Simple to use but reasonably sophisticated
- ▼ Not much easier to use than more powerful packages

Easy to use

- ▲ Good range of mathematical calculation functions.
- ▲ Good documentation — sections for beginners and reference.
- ▲ You can preset a course of cells to visit, for form filling.
- ▲ Can be integrated with other Pocket products, eg ReportStar
- ▼ Screen size is very small — 10-15 spreadsheet rows.
- ▼ No auto-recalculate facility
- ▼ It's not very fast
- ▼ You can't type heading text etc. over adjacent columns

MULTIPLAN

£69.99 • MicroSoft/NewStar • 0277 220573

A well established package with all the features you would expect of a reasonable spreadsheet — it just lacks that something extra that recommends some of the newer ones. No support for command reading from files, or for "virtual memory". Adequate, but there are better for the money. And the manual can kill at twenty paces!

PLUSES • MINUSES

- ▲ Functions easily entered by menu selection
- ▲ Full range of features and functions
- ▲ On-screen help text is available as you go
- ▲ Sheets can be interlinked and data transferred between them
- ▼ You need a computing degree to understand the manual
- ▼ No support for automatic execution
- ▼ Workspace is limited by CP/M memory space
- ▼ Printer output a bit cumbersome

POSTAFONT

£9.95 • Independent User Group • 0242 224340

It's easy to ring the changes with the five fonts provided on this poster program because you can have either solid or hollow characters in one of six patterns. Very good value for money but best for the occasional poster producer.

PLUSES • MINUSES

- ▲ Its really good value for money.
- ▲ You can freely mix fonts and styles
- ▼ The print commands are contained in a file which you have to create yourself.
- ▼ No warning if the poster is too big for the paper.

LIGHTNING BASIC

£19.95 • CP Software • 0993 823496

A very clever add-on to normal Basic which works on three levels. The first contains all the everyday commands, whilst the second and third levels are used for designing icons, characters and sprites. There is something in it for everyone, whether an experienced Basic programmer or a beginner.

PLUSES • MINUSES

- ▲ Simple and easy to use
- ▲ Makes simple Basic programs look really professional
- ▲ Good fun to use
- ▼ Documentation can be unclear
- ▼ Printed output is coarse draft quality
- ▼ Can only cope with simple graphics

• GRAPHICS •

You can use a graphics package to create and store diagrams and drawings on disc, to be amended, adjusted or printed out at will.

There are three main types of graphics package: art, technical drawing and graph plotting programs. In art packages the emphasis is on designs and pictures, with freehand drawing facilities, a selection of pretty text fonts and a variety of patterns to fill areas with. These are made much more effective and easier to use if you have a mouse.

Technical drawing packages concentrate on shapes, such as squares and polygons, lines and labels. Finally graph plotters will take your data and turn them into bar charts, pie charts and so on. 9512 owners will have to buy a dot matrix printer to do all this, of course.

DR DRAW

£49.95 • Digital Research • 0635 35304

This is a drawing utility, which allows you to compose designs from circles, polygons, lines and a wide variety of shadings and styles of text. It's very cumbersome to use unless you also have a light pen or a mouse, and overall not very friendly. Not recommended unless you're ready for some hard work.

PLUSES • MINUSES

- ▲ When pushed, it can produce very neat diagrams
- ▲ Good, professional manual
- ▼ You need CP/M expertise to get it installed and going
- ▼ Painfully slow screen handling
- ▼ Difficult to use by keyboard alone — you must buy a lightpen or mouse

DR GRAPH

£49.95 • Digital Research • 0635 35304

A rather specialised package, specifically for presenting complex data in graph form. Can produce line graphs, bar charts, piecharts, scatter plots, text, and compositions of any mixture of these. Very flexible, and easily operated by menus, but really needs a graph plotter to do it justice.

PLUSES • MINUSES

- ▲ Can read data from certain spreadsheet programs (e.g. SuperCalc)
- ▲ Extensive annotation of your designs and text placing is possible
- ▲ Good, professional manual (although no mention of Amstrad specifics)
- ▲ Supports a colour graph plotter as an output device
- ▼ You need to have some CP/M expertise to get it installed and going
- ▼ There is no way of joining points by a smoothed curve

LIGHTPEN/ MOUSE ART

£79.95 or £129.95 • Electric Studio • 0462 675666

Ostensibly you are buying a piece of hardware — a light pen, or a mouse, that can be used with many PCW graphics programs, like DR Draw. In practice, its main use is with the software that comes with it, a very good picture drawing package. You can freehand draw, get airbrush effects, create polygons and circles, and move blocks of pixels. Great fun.

PLUSES • MINUSES

- ▲ Light pen hardware is a simple plug-in module
- ▲ Can use freehand pen or cursor keys for accuracy
- ▲ Menu selections are easy to understand
- ▲ Full range of functions for area filling, shading and spraying
- ▲ Blocks of pixels can be moved and copied
- ▼ You would need to know your way around CP/M to use the lightpen itself with other graphics programs
- ▼ Items on the screen are purely pixels, not distinct elements
- ▼ No positioning of items by numeric co-ordinates for accuracy.

MASTER PAINT

£19.95 • Database Software • 0625 878888

A WIMP environment graphics package (windows, icons, menus, and pointer) which will run with Kempston, AMX or Electric Studio mice. Usual facilities for drawing curved or straight lines, polygons, boxes, circles and ellipses, and a host of 'fill' patterns. 'Undo' function and eraser facility, plus the ability to zoom in on a part of the picture.

PLUSES • MINUSES

- ▲ WIMP environment makes it easy to use
- ▲ Zoom function lets you fine-tune your pictures
- ▲ Good range of effects
- ▲ Undo and erase facilities
- ▼ Text fonts are boring
- ▼ Can't move large blocks with the copy function

MASTERSCAN

£69.95 • Database Software • 0625 878888

A device which clips on to your printer head and scans pictures, sending the digitised result to disc. You can then use the pictures in desktop publications or in other graphics packages, such as Master Paint. Very useful for newsletter production but the claims for Master Scan as a low-cost fax machine are grandiose — the quality of scanned text is poor if the text is anything less than headline size.

PLUSES • MINUSES

- ▲ Simple method of getting good digitised graphics
- ▲ Suitable for all desktop publishing programs
- ▲ Contrast control useful
- ▼ Quality of scanned text is bad — no good for faxes
- ▼ Problems with illustrations containing lots of grey

Powerful

COMPLEMENT FONTS & BORDERS

£12.50 • Dragonfly Designs • N/A

Although it can be used with all the main DTP packages, this latest complement disc was designed to work alongside Stop Press. The 11 fonts supplied on the disc show consistent good design and artistic flair and are easily loaded.

PLUSES • MINUSES

- ▲ The fonts provide a very professional finish.
- ▲ It is possible to rotate and reverse elements.
- ▲ Very user-friendly.
- ▼ Setting up borders tends to be difficult and time-consuming.
- ▼ Printed output could be better (but it is still above average).

SIGNWRITER

£49.95 • Wight Scientific • 01 858 2699

Offers the widest range of features of any of the poster printing programs. Signwriter provides a range of 20 fonts, some of them very imaginative. Ideal for posters.

PLUSES • MINUSES

- ▲ You can redesign fonts and design your own symbols.
- ▲ A wide range of interesting fonts is supplied
- ▼ Not very user-friendly.
- ▼ Font design is slow.

STOP PRESS

£49.99 • Database Software • 0625 878888

Though touted as a DTP program, Stop Press is an excellent graphics package. Can present data in the form of graphs, pie charts etc., and has the usual range of facilities to draw and fill triangles, boxes and so on plus a very good 'zoom' option which lets you examine the effect of changes in great detail.

PLUSES • MINUSES

- ▲ Good graph drawing facilities
- ▲ Can design your own area fill patterns
- ▲ Good range of clip art, which you can modify if you wish
- ▲ Can superimpose one image on another
- ▲ Works with AMX and Kempston mice
- ▲ Is also a good DTP package
- ▼ Undoing wrongly placed text is difficult

AYE PLUS

£19.95 • CP Software • 099382 3463

The full title is 'All you ever wanted to know about graphics, the universe and everything on PCW 8256/8512 ... but were afraid to ask PLUS'. Phew. A wide range of little programs to do graphic things on the PCW like smooth scrolling, defining windows, moving sprites around. The programs are written in assembler, with the source code provided if you want to see how to program them for yourself and adapt the routines.

PLUSES • MINUSES

- ▲ Wide range of useful functions

THE GOOD SOFTWARE FILE

GRAPHICS • GAMES

- ▲ Can be used from BASIC, machine code, or other language
- ▲ The assembler source code is supplied
- ▲ Inexpensive
- ▲ Good manual
- ▲ CP don't mind you using their routines in programs you sell
- ▲ A bit long-winded to use from BASIC
- ▼ No easy way of loading just the routines you want

VIDI PCW

£99.95 • Rombo Productions • 0506 39046

A very similar package to the Electric Studio digitiser; not much to choose between the two. Rombo's works with the Fleet Street Editor, Electric Studio's with Newsdesk International.

PLUSES • MINUSES

- ▲ Text can be inserted from within the program
- ▲ 16 levels of shading
- ▲ Can print images to screen in defined order and time apart
- ▼ Unhelpful manual

VIDEO DIGITISER

£99.95 • Electric Studio • 0462 675666

A black box which plugs onto the expansion port at the back of the PCW, into which you put a video camera or video recorder. It will then 'digitise' the picture it receives and display it on the screen. The result can be used as a normal graphic in any of the desktop publishing packages and can be edited, cut, etc.

PLUSES • MINUSES

- ▲ Automatically picks a good contrast level for the display
- ▲ Can store pictures for Light Pen or Mouse to work on later
- ▲ Can print out on a full A4 page
- ▼ Can't take simple TV signals – video only
- ▼ When used in a desktop publication, won't be as good as screened photographs

GRAPHICS	3/5	STRENGTH OF PLAY	3/5
LASTING APPEAL	4/5	VALUE VERDICT	3/5

CORRUPTION

£24.95 • Rainbird (01 240 8838) • All PCWs

Takes you into the heady world of stocks and shares where making money is what it's all about. There's something rotten in the state of Scott Electronics and it's up to you to find out what.

ATMOSPHERE	4/5	INTERACTION	5/5
CHALLENGE	4/5	VALUE VERDICT	5/5

CYRUS II CHESS

£15.95 • Amsoft (0277 230222) • All PCWs

Chess game with a stunningly detailed 3-D display. The play is quite strong, with several handy features like allowing you to take back a move.

GRAPHICS	5/5	STRENGTH OF PLAY	3/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

• GAMES •

ACADEMY (TAU CETI II)

£19.95 • CRL (01 533 2918) • 8000s only

The sequel to Tau Ceti. To qualify as an advanced skimmer pilot, you must complete successfully 20 missions. Blast enemy craft with your personally designed skimmer.

GRAPHICS	4/5	ADDICTIVENESS	5/5
LASTING APPEAL	4/5	VALUE VERDICT	5/5

ARMAGEDDON MAN

£19.99 • Martech (0323 768456) • 8000s only

As Supreme Commander and world leader you have to prevent nuclear war from breaking out by preserving good diplomatic relations between the 16 member countries of the UNN. Nip conflict in the bud by providing sufficient food and resources.

GRAPHICS	4/5	ADDICTIVENESS	4/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

BACKGAMMON

£15.95 • CP Software (099382 3463) • All PCWs

A fairly good implementation of the gambling board-game. Playing speed is easily alterable and is totally unrelated to the games level of skill control.

RANGE OF FEATURES	4/5	STRENGTH OF PLAY	3/5
GRAPHICS	4/5	DOCUMENTATION	3/5

BATMAN

£14.95 • Ocean (061-832 6633) • 8000s only

3-D animated graphics as you guide Batman around Gotham City, looking for hidden parts of the Batcraft. Good range of hazards, and even a tune!

GRAPHICS	5/5	ADDICTIVENESS	5/5
LASTING APPEAL	4/5	VALUE VERDICT	5/5

BLACKSTAR

£14.95 • CRL (01-533 2918) • 8000s only

A traditional text adventure with large playing area. You explore Castle Blackstar in search of a power orb.

ATMOSPHERE	4/5	INTERACTION	2/5
CHALLENGE	4/5	VALUE VERDICT	4/5

BOUNDER

£13.95 • Gremlin (0742 753423) • 8000s only

A graphics bouncing-ball game. You have to direct the ball over a treacherous network of squares & hexagons. Persevere – or use the cheat mode!

GRAPHICS	4/5	ADDICTIVENESS	3/5
LASTING APPEAL	3/5	VALUE VERDICT	4/5

BRIAN CLOUGH'S FORTUNES

£17.95 • CDS (0302 21134) • All PCWs

A cross between Monopoly and Football Manager, combining board and PCW. Go for league and cup success – but keep the bank manager happy too!

GRAPHICS	2/5	ADDICTIVENESS	4/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

BRIDGE PLAYER 2000

£19.95 • CP Software (099382 3463) • All PCWs

A few of the bids it makes seem a little strange, but as bridge programs on computers go this is pretty good. Claims not to cheat, even though it deals!

GRAPHICS	3/5	STRENGTH OF PLAY	3/5
LASTING APPEAL	4/5	VALUE VERDICT	3/5

CATCH 23

£19.99 • Martech (0323 768456) • All PCWs

A game of exploration on an inhospitable island which has been taken over by the military. Your task is to locate the 'most secret military complex on earth' and escape with the design of their most deadly weapon.

GRAPHICS	4/5	ADDICTIVENESS	4/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

CLASSIC GAMES

£19.95 • CP Software (0993 823463) • All PCWs

A compilation of classic 'thinking' games on one disc: Clock Chess, Bridge Player, Backgammon and Draughts. Excellent value for money.

CLOCK CHESS 89

£19.95 • CP Software (0993 823463) • All PCWs

One of the better PCW chess programs. You can alter the level of play by specifying a time limit. Capable of very strong play and the 3D graphics are excellent.

GRAPHICS	4/5	STRENGTH OF PLAY	5/5
RANGE OF FEATURES	5/5	VALUE VERDICT	5/5

COLOSSUS CHESS 4.0

£15.95 • CDS Software (0302 21134) • All PCWs

A very strong chess game which manages to use time which you spend thinking to plan its strategy. Bags of features, including blindfold games.

DOUBLE T PATIENCE

£17.95 • Thurston Techniques (0395 277496) • All PCWs

Six well-known card games (from Poker Patience to Pairs) to be played either alone or against the computer.

GRAPHICS	2/5	ADDICTIVENESS	5/5
LASTING APPEAL	4/5	VALUE VERDICT	3/5

FISH

£24.99 • Rainbird (01 240 8838) • All PCWs

The underwater world of Hydropolis is under threat from a gang of interdimensional anarchists. They've stolen a focus wheel and dismantled it; your job is to get it back. Excellent graphics.

ATMOSPHERE	5/5	INTERACTION	4/5
CHALLENGE	4/5	VALUE VERDICT	5/5

GNOME RANGER

£14.95 • Level 9 (0344 487597) • All PCWs

You follow the adventures of Ingrid Bottomlow, the intrepid gnome, through a fairy tale landscape full of compelling puzzles. Humorous and rather quaint.

ATMOSPHERE	3/5	INTERACTION	3/5
CHALLENGE	3/5	VALUE VERDICT	4/5

GUILD OF THIEVES

£24.95 • Rainbird (01-240 8838) • 8000s only

To join the select Guild of Thieves in Kervonia, you first have to show your worth by fleeing an island of all its treasures. An excellent adventure!

ATMOSPHERE	5/5	INTERACTION	4/5
CHALLENGE	4/5	VALUE VERDICT	5/5

HEAD COACH

£15.95 • Coda (01-789 9551) • All PCWs

You coach an American Football team, picking players and deciding tactics against real NFL teams and players. Incredibly detailed simulation – a must for NFL fans!

ATMOSPHERE	4/5	INTERACTION	5/5
CHALLENGE	4/5	VALUE VERDICT	4/5

HEAD OVER HEELS

£14.95 • Ocean (061 832 6633) • 8000s only

A superlative, compulsive 3D arcade adventure where you control either Head or Heels. Escape from Castle Blacktooth and free the Empire's enslaved planets.

GRAPHICS	5/5	ADDICTIVENESS	5/5
LASTING APPEAL	5/5	VALUE VERDICT	5/5

THE GOOD SOFTWARE FILE

GAMES

HITCH-HIKERS' GUIDE

£24.95 • Comsoft (0890 2854) • All PCs

In many people's minds, the best adventure program ever written. Based on Douglas Adams' series, it is ingenious, hilarious and mind-boggling. A must!

ATMOSPHERE	5/5	INTERACTION	5/5
CHALLENGE	5/5	VALUE VERDICT	5/5

INGRID'S BACK

£19.95 • Level 9 (0344 487597) • All PCs

Sequel to Gnome Ranger in which Ingrid returns to Little Moaning to find it under threat from Jasper Quickback who wants to replace it with a yuppie estate. Adventure in 3 parts.

ATMOSPHERE	4/5	INTERACTION	4/5
CHALLENGE	5/5	VALUE VERDICT	4/5

JINXSTER

£24.95 • Rainbird (01 631 5373) • All PCs

This one's all about saving the civilisation of a place called Aquitania from the wicked Green Witches. All you have to do is find and reassemble a magic bracelet and redirect its errant powers. A very atmospheric game.

ATMOSPHERE	5/5	CHALLENGE	5/5
INTERACTION	4/5	VALUE VERDICT	4/5

LANCELOT

£14.95 • Mandarin/Level 9 (0625 878888) All PCs

A game in three parts which recounts the adventures of Lancelot. Manufacturers have vividly created an Arthurian world in which points are awarded for displays of chivalry, valour or benevolence. The game permits a full range of powerful commands.

ATMOSPHERE	5/5	INTERACTION	5/5
CHALLENGE	4/5	VALUE VERDICT	5/5

LEATHER GODDESSES OF PHOBOS

£24.95 • Comsoft (0890 2854) • All PCs

Lascivious, licentious and lewd – definitely not for feminists! An excellent adventure game, spoofing both sci-fi and Soho. With 3D scratch'n'sniff card!

ATMOSPHERE	5/5	INTERACTION	5/5
CHALLENGE	5/5	VALUE VERDICT	5/5

LORD OF THE RINGS

£19.95 • Melbourne Ho. (01 727 8070) • All PCs

Excellent adaptation of the Tolkien classic. You take the role of Frodo or one of his group, and rove through Middle Earth meeting balrogs, orcs, wargs and all.

ATMOSPHERE	5/5	INTERACTION	5/5
CHALLENGE	5/5	VALUE VERDICT	5/5

LURKING HORROR

£24.95 • Activision (01-431 1101/2992) • All PCs

Something nasty is lurking down in the bowels of the George Edwards Institute of Technology – find it before it finds you!

Another great game from Infocom.

ATMOSPHERE	4/5	INTERACTION	4/5
CHALLENGE	3/5	VALUE VERDICT	4/5

MATCHDAY II

£14.95 • Ocean (061 832 6633) • All PCs

Excellent football simulation game with superb graphics. Tackling and jumping, volleying and heading etc. Play against the computer or against a friend.

GRAPHICS	5/5	ADDICTIVENESS	5/5
LASTING APPEAL	5/5	VALUE VERDICT	5/5

MINDFIGHTER

£24.99 • Abstract Concepts/Activision (01 431 1101) • 8000s only

An adventure game set in post-holocaust Southampton. Hero is a psychic 11 year old boy who can change himself into all different kinds of animals, and who has accidentally projected himself into the future. It's up to him to change the course of events and prevent nuclear war.

ATMOSPHERE	5/5	INTERACTION	3/5
CHALLENGE	5/5	VALUE VERDICT	4/5

THE PAWN

£24.95 • Rainbird (01-240 8838) • All PCs

An excellent adventure with dozens of superb screen illustrations, zany characters and a host of baffling puzzles. Will keep you enthralled for hours.

ATMOSPHERE	5/5	INTERACTION	5/5
CHALLENGE	5/5	VALUE VERDICT	5/5

RETURN TO DOOM

£12.95 • Topologika (0733 244682) • All PCs

Sequel to Countdown to Doom: you're back on the planet Doomawangera again to track down the ambassador Regina who has been kidnapped by some very unpleasant robots.

ATMOSPHERE	3/5	INTERACTION	2/5
CHALLENGE	4/5	VALUE VERDICT	4/5

SILICON DREAMS

£19.95 • Rainbird (01-240 8838) • All PCs

A trilogy of intriguing adventure games. You are secret agent Kim Kimberley saving Snowball 9 from almost certain doom! With a humorous novella.

ATMOSPHERE	4/5	INTERACTION	4/5
CHALLENGE	4/5	VALUE VERDICT	4/5

SCRABBLE

£19.95 • Virgin Leisure (01-727 8070) • All PCs

Excellent implementation of the famous game. 1 to 4 people can play the computer, which knows a fair few obscure words. Good graphical display. Eight levels of difficulty, and the top level scores 350 or so regularly, so you have to be on top form!

GRAPHICS	4/5	ADDICTIVENESS	3/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

SORCEROR

£24.95 • Activision (01-431 1101/2992) • All PCs

Enter the world of necromancy and sorcery courtesy of another intriguing and mind bending adventure game from Infocom. You have to find out the correct spells which will locate your missing master, Belboz.



ATMOSPHERE	5/5	INTERACTION	4/5
CHALLENGE	4/5	VALUE VERDICT	4/5

STARGLIDER

£24.95 • Rainbird (01-240 8838) • 8000s only

A sophisticated shoot-'em-up with 3D vector graphics and a dose of strategy too. Your task is to save Novenia, helped by a complex playing guide.

GRAPHICS	5/5	ADDICTIVENESS	4/5
LASTING APPEAL	4/5	VALUE VERDICT	5/5

STATIONFALL

£24.95 • Activision (01-431 1101/2992) • All PCs

Sequel to Planetfall. You explore a space station with your chums Floyd and the philosophical robot Plato. Usual Infocom standards – a great sci-fi adventure, a mix of 2001 and Star Trek!

ATMOSPHERE	5/5	INTERACTION	4/5
CHALLENGE	5/5	VALUE VERDICT	4/5

STRIKE FORCE HARRIER

£19.95 • Mirrorsoft (01-377 4645) • 8000s only

A combat simulation of a Hawker Harrier, designed in conjunction with British Aerospace. Very detailed and realistic but you'll need to put in a few hours with the manual to get off the ground.

GRAPHICS	4/5	ADDICTIVENESS	3/5
LASTING APPEAL	3/5	VALUE VERDICT	3/5

TIME AND MAGIK

£14.95 • Mandarin Software (0625 879920) • All PCs

An excellent trilogy of time travel adventure which can be played in any order. Your task is to protect the history of the world from the destructive time lords – another very atmospheric game.

ATMOSPHERE	5/5	INTERACTION	4/5
CHALLENGE	5/5	VALUE VERDICT	5/5

TETRIS

£19.99 • Mirrorsoft (01-377 4837) • 8000s only

You fit together bricks of various shapes that drop out of the sky at the bottom of the screen. The better the fit, the higher your score. One of those ridiculously simple ideas which is very addictive!

GRAPHICS	3/5	ADDICTIVENESS	5/5
LASTING APPEAL	4/5	VALUE VERDICT	5/5

TOMAHAWK

£19.95 • Digital Int. (0276 684959) • All PCs

A sophisticated Apache helicopter flight simulator. Impressive cockpit view graphics as you engage in combat missions – can be used with a joystick too.

GRAPHICS	4/5	ADDICTIVENESS	3/5
LASTING APPEAL	4/5	VALUE VERDICT	4/5

WORLD OF SOCCER

£15.95 • Coda (01 789 9551) • All PCs

A soccer management simulation game; you select squads of players for your international team and guide them through the European and World Cups. Gives a good insight into the kind of strategic thinking required.

ATMOSPHERE	4/5	INTERACTION	3/5
CHALLENGE	4/5	VALUE VERDICT	4/5

NEXT MONTH

The guide continues next month with the categories of WORDPROCESSORS, ACCOUNTS/ PAYROLL, UTILITY and DTP. The month after that will cover DATABASES, EDUCATION and COMMUNICATIONS software, and the month after that it's back to this month's topics.

Our intention is to keep publishing the three parts

of the guide in rotation, updating it each month to include all new products. If you would like to see other sections of the guide, back issues of 8000 Plus are available at £1.75 each.

Meanwhile, if you are aware of any significant omissions or errors in the File as published, please let us know. We intend to maintain it as THE authoritative guide to PCW software.

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We have limited quantities of the back issues listed below. The prices include a nominal 25p postage. All issues contain excellent TipOff sections and a selection of BASIC listings, plus the other regulars. Don't miss the chance to expand your collection!

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AL OFFERS

THE 8000 PLUS SPECIAL OFFERS SELECTION

Welcome to the 8000 Plus Special Offers section. This month we have strived to bring you not only the best products on price and quality, but also the very latest.

On the leisure side we have the latest from Rainbird/Magnetic Scrolls, a game called "FISH" - great fun for any PCW owner who wants additional pleasure from his machine.

On the more serious side- "We are pleased to announce....the latest Mini-Office full details of that and its upgrade product for the existing one." We hope you also like the desk and accessories we've featured on the following pages - all of which confirm to our usual requirement of high quality and excellent value.

If you have any queries on the products please call 0458 74011-

TOMAHAWK

Only £14.95
(RRP £19.95)

This 9512-compatible helicopter simulator is just the best! Quite apart from the fact that it's the only one, Tomahawk has won heaps of praise as being a superb real-time simulator based on the Apache helicopter.

Full instrument panel includes artificial horizon, Doppler navigation, VDU, with a map. A full range of flying options includes backwards and sideways flight, aerobatics, take-off and landing procedures and torque turns. Four skill levels plus day/night, clear/cloudy and wind options are available. Four mission types are included. **Plus** three weapons (gun, rocket and missiles) and enemy guns, tanks and helicopters to take out.

A huge program in every way!
Order Code 8049



9512 software:
The following titles do not run on the 9512:
Catch 23

CATCH 23

Just £14.95 (RRP £19.95)

'A good deal of thought and planning has gone into this game and it shows', was what our reviewer said of this 3D wire graphic arcade strategy game in issue 25 of 8000 Plus. Martech's first PCW game is something of a quiet triumph for intelligent gameplay interspersed with furious action requiring lightening-fast reactions at key points.

The basic aim is to enter a military complex and get out with a laser system blueprint. You have 14 sectors to explore, and weapons include detonators, bombs and timers. The vector graphics - a la Starglider - involve you in a thoughtful game which offers the best PCW entertainment for many a long winters night.
Order Code 8043



Fish Rainbird/Magnetic Scrolls

RRP £24.99 OUR PRICE £19.95

As reviewed in this issue of 8000 Plus Mar '89.

ONE NIBBLE AND YOU'RE HOOKED

An adventure game where you play the part of a goldfish !? With full marks for originality and excellent graphics on a PCW A With characters such as Chuckette Cemethhead and Captain Horatio Pineapple, just two of the members from the "Seven Deadly Fins" - as your enemies your task is to recover the stolen "Focus Wheel" A well written game from the authors of such classics as "The Pawn" and "The Guild of Thieves" - an essential piece of light relief from Locoscript!

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£29.95 plus Locoscript II wall chart and highlighter pens

'It's difficult to think of any LocoScripters who wouldn't find LocoFile useful', was Rob Ainsley's conclusion when he previewed Locomotive's new database in issue 26 of 8000 Plus.

The fact is, a database which can be accessed from inside LocoScript II and is fully compatible with LocoMail is a brilliantly logical idea. Locomotive's usual panache comes to the fore in the feel of the program too. Essentially an easy to use card index, LocoFile features flexible indexing, fast lookup, efficient use of disk space and is suitable for any PCW (plus three hard disk drives).

Features include:

- Look up or change card details from within LocoScript
- CUT and PASTE to and from LocoScript
- Use up to eight indexes at once - alphabetic or numeric
- Cards up to 99 lines by 80 columns wide
- Up to 50 items per card
- Holds 1,000 names and addresses on a 706K disk
- No limit to number of entries on hard disk
- Add or delete fields, change card size at any stage
- Fully two-way compatible with Loco Mail

For all LocoScript 2 users who want an expandable suite of applications, Locomotive is providing the answer without ever having to boot up CP/M! LocoFile provides the classic easy-to-use environment familiar to LocoScript users and has all the hallmarks of a major software launch - Sighs of relief all round!

Order Code 8044
(8256 version)
8048 (9512 version)

FREE!

- With your copy of LocoFile
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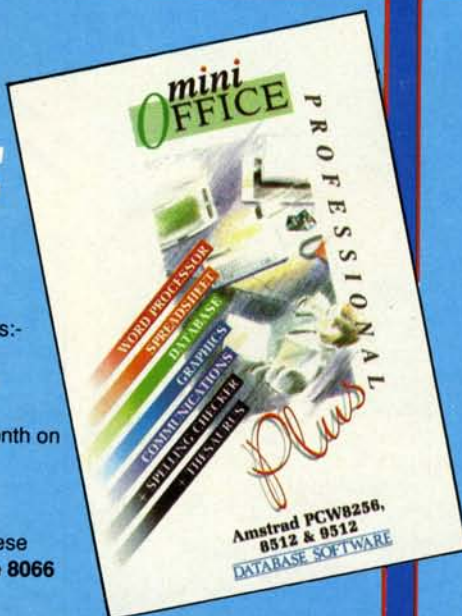
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The product proved to be excellent value before but with these exceptional additions it should not be missed. Order Code 8066



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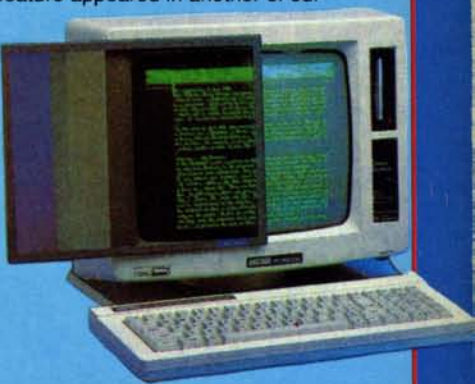


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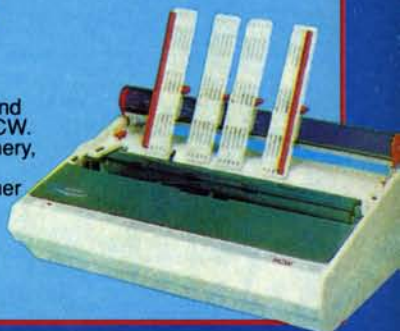


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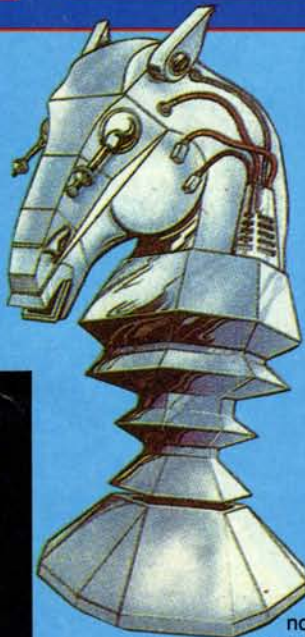
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CLOCK CHESS '89

Just £17.95 (RRP £19.95)

This latest update is really one of the most
incredible chess programs on the market for
any computer, as CP Software's fine-tuning
enhances the 3D graphics, extends the
openings library and cranks up the speed of
response. Clock Chess '89 is invariably the winner in
computer competitions - indeed UK Chess Champion



Mike Basman calls it 'a lively and interesting
opponent, an aggressive program that
keeps you on your toes', then displays his
own killer touch by adding: 'It dices up
Colossus Chess nicely'.

Features of the game include:

- Recommends your next move
 - Displays up to 62 moves to printer or
screen
 - Program v program option
 - Timer forces move on either or both sides
 - All rules understood including
underpromotion, draw by repetition and by
50 rule move.
 - Save/load a game to/from disk
 - 44K openings memory - add your own
opening moves!
- Clock Chess '89 beat Clock Chess '88 6-
4, so the differences are discernable and
all add up to the most sophisticated 8-bit
chess game yet built. It might be worth

noting that CP claims that this version beat all
other chess programs including the ones from

Psion, CDS, Amsoft and OCP by an outrageous 10 games to nil (see
box left).

So after that there's only one way to find out! We're delighted to be
able to present Clock Chess '89 so early in its career. We are confident
that there's at least 12 months - if not a lifetime - left in it yet.

Order Code 8051

Clock Chess '89 vs.

	Publisher	Hardware	Result
Clock Chess '88	CP Software	PCW	6-4
Cyrus 2 Chess	Amssoft	PCW/CPC	8-2
3D Clock Chess	CP Software	PCW	9-1
Superchess 3.5	CP Software	Spectrum	9-1
Colossus 4 Chess	CDS	PCW/CPC/Spec	9-1
Psi Chess	The Edge	Spectrum	10-0
Grandmaster	Audiogenic	CBM64	10-0
Psion Chess	Psion	Spectrum	10-0
MasterChess	Amssoft	CPC	10-0
MasterChess	Microgen	CPC	10-0
Spectrum Chess	Artic	Spectrum	10-0
Chess - The Turk	OCP	Spectrum	10-0

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No other magazine would be so foolish! But at the end of the day, rest assured that you will be getting the best coverage of the PCW market you can find. No one does it better because no one cares as much!

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money.

Carefully put together by the 8000 Plus editorial team, we are sure that you will find something to justify the price whether you are a regular reader or a newcomer to the PCW world. Of course, we hope that regular readers will find that many loose ends from articles over the past 12 months are now resolved with the programs here - especially items on Mini Office and other listings. Indeed we intend to continue publishing programs that round off instructional features, because there is that sense of completion which comes with using the computer medium whilst working with the article.

If you would like to order the program with a subscription, quote Order Code 81100. If you just want the program on its own (at a price of £7.95)



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[illegible]

POSTSCRIPT

Intelligent individuals, inferences, insights and interesting inquiries

Well here we are again desperately trying to withstand a hail of accurately lobbed missives. We do our best to avoid them but a few are bound to get through. If you feel like recklessly heaving a few well chosen words at us then set pen to paper and aim in the general direction of Postscript, 4 Queen St Bath BA1 1EJ.

Vote of confidence

We often hear grumbles about lack of service these days. I would therefore like to pass to you my appreciation of the service received from Silicon City. I recently ordered a second drive unit from them, posting the order on Saturday to arrive on Monday or Tuesday. The item arrived, very well packed, on the Thursday of that week. I do not see how anyone could have bettered that. Thank you, Silicon City.

K J Moorey
Devizes
Wiltshire

8000 PLUS Most suppliers are honest decent and true, or they don't stay in business long. It's a common observation that a business can do everything well and no one comments; but do one thing badly and everyone comments. So it is nice to be able to print a letter from someone who has been served well and is happy to say so.

Pastime for games

I have a few questions you may wish to include in your letters page.

1. Why has the price of the Memory Upgrade doubled? When I was first looking to upgrade my 8256 it would have cost me around £28, now it costs more than £50.
2. Is there any program available just as a day to day diary with more room on each page than DATAfax? Even better has someone or could

someone make a Basic program for the 'listings' that would accommodate, let's say, a whole page of typing per day. I'm not sure myself how easy this would be.

3. Why are there not more easy to play, simple in construction, games for the 8256? Such as, TV Quiz games, Blockbusters, Every Second Counts, Bullseye, etc. These games do not require a great deal of effort to learn how to use, are normally question driven and surely suited to the 8256 because graphics do not play a big part (not saying that the 8256's graphics are no good, but know what I mean). I have played many of these games on other machines and found them an ideal pastime for someone like me who uses his machine all day for work. It can be very relaxing playing a game that does not require the skill for TOMAHAWK or the concentration for an adventure game.

4. Why is your magazine so bloody good?

Cpl M A Pearce
British Forces Post Office

8000 PLUS 1. The price of memory went up because various countries imposed protectionist measures against cheap ram chips without finding out whether or not they could make enough themselves.

2. No. Why not use a word processor and have a six month diary on disc with one file per day? call them JAN1, JAN2 etc and write as much as you like.

3. Indeed, why aren't there more such games?

4. We're too modest to say. Oh all right, it's because we are very clever, try very hard and work sixteen hour days.

Tinkerbell time

Having read the article "Tomorrow world" in your January issue, I would like to present to everyone concerned the wish list of what a perfect PCW should be like.

The PCW 8512 Plus would include a hard disc where B drive used to be. The manual of Mallard Basic would come with the program. Lightning Basic would replace LOGO - and be given with its manual too.

Hard disc comes with a compatible Locoscript 3. This new version has a revolutionary add-on: a word counter. Mini Office Professional would then issue a free-of-bugs hard disc compatible version.

There would be a 8512 Plus De Luxe model for the connoisseur

with a 24-pin printer.

Come on, who needs hi-tech hardware add-ons? And extra 512k bytes? Or sophisticated desktop publishing programs? This is not that kind of computer. It's user is not that kind of client.

Speaking as an advertising copy writer (sorry for the professional jargon) that's not the positioning PCW is supposed to occupy. The target DTP and video-digitisers are supposed to attract have other backgrounds and, to satisfy their needs, better hard and software dedicated to specific professional needs.

PCW users are free-lance writers, small business men, who need cheap and reliable solutions for their day to day needs, without having to spend long and expensive training sessions learning those monsters called Symphony or Ventura.

Thank you for your attention, and my compliments for your fine editorial work.

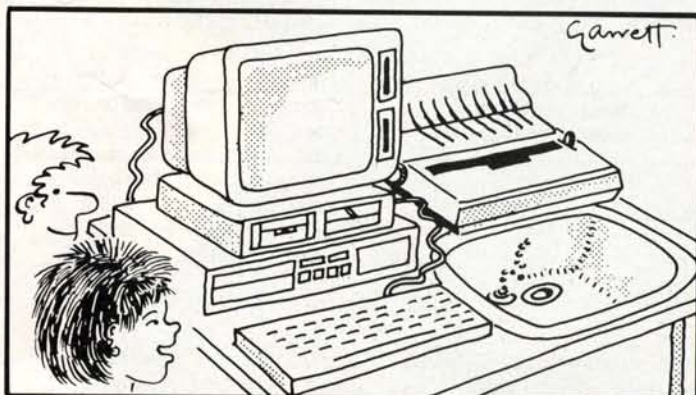
Artur G Tome
Loures
Portugal

8000 PLUS We guess that most PCW owners would like to wake up and find their PCW upgraded by the tooth fairy and sporting all the goodies you describe.

The problem is that the price of the machine you describe would be far too high to attract those very people the machine is aimed at. Having said that I still think that taking the Basic manual out of the package was petty.

Nostalgia revisited

My local library is not renowned for its range of books useful to PCW owners. I think there are now two. The rest mainly target coming generations of BBC experts. My expectations were modest, therefore, when I picked up Inside CP/M Plus by David E Cortesi the other day. Moreover, as an American book from 1984, which I



"ARE YOU SURE YOU'VE GOT EVERYTHING YOU WANT NOW?"

had never heard of before, it could hardly be very relevant. It is.

I would like you to review it. In the meantime my own view is that it is an extremely helpful book, which takes the beginner through all the CP/M commands, except those needed only by programmers, in an enjoyable straight Californian style. None of the prep school teacher style we PCW sufferers have had to put up with ("... but of course LocoScript has a Sugar solution to all your little problems. Just...").

Cortesi (I am sure I should call him Dave) doesn't explain binaries and bothers little about hexes. After a brief look at concepts, hardware and software, he sits you down in front of your computer and makes you go exploring. Surprisingly in a book which addresses a wide range of machines – and before the PCW was even a twinkle in Alan Sugar's eye – I found no significant misfit with my 8512. I think Setdef requires a comma (m:), not a space (m: *), and Dave's typesetter exercises a consistent idiosyncrasy of using open square brackets both before and after pip options – but only before the = sign!

In this book there is no infuriating "this utility is not covered any further in this manual". Every command is dealt with clearly and exhaustively. I was astonished how much I could learn.

Henning Brondum-Nielsen
Perthshire
Scotland

8000 PLUS There is a number of excellent books on CP/M from the early days of the operating system. Some of them are difficult to obtain now but we may well cover the best of them in a future issue.

One thing to watch out for if you're a programmer is that most of these books only cover CP/M 2.2 and so don't include many of the powerful CP/M Plus features.

Summing it up

Your review of educational software in the January edition of 8000 Plus has stimulated me write to you.

I purchased both 'Giantkiller' and School Software's 'Maths Mania' for my children prior to seeing the review. As a result I read the review with great interest to see how they were judged, particularly as they are both the same price.

Your reviewer, Sharon Bradley, is over-generous in her description of 'Maths Mania'. My assessment would be that it is overpriced

rubbish. The scope of testing is painfully limited, while the screen presentation is poor and unimaginative. As for the 'zany' messages, I fear that five minutes was longer than enough to exhaust their interest value.

On the other hand, I completely agree that 'Giantkiller' sets a refreshingly new attempt to enliven 'maths' type programs. Both my eight year old daughter and myself are presently having a lot of fun with this game. I think Peter Killworth has pitched the game, puzzles and solutions very well. I would certainly recommend 'Giantkiller' as a game to buy, and hope Topologika continue to experiment further. A quick scan of the range of topics and programs available on the BBC family of computers shows a wealth of potential.

I use reviews and tests to assist in my selection of software since my principal source of software at present is by mail order. Even if you are lucky enough to find software stocked locally, you are less likely to be able to see it in action before purchase. Good software does not come cheap. Poor software, unfortunately, often costs the same. I would suggest that reviews of this type could usefully include the type of synopsis you present in "The Good Software File" to round off the task.

Peter Watson
Lincoln
Lincs

8000 PLUS There is bound to be a subjective element in any review and to some extent it's difficult to gauge the effectiveness of packages like Maths mania without having a child conveniently to hand – your comments will prove valuable to others contemplating these packages.

As for the BBC – the PCW can't compete in the educational arena.

Sound comment

I was rather disappointed by the "off the peg" article of one Steven Patient Esq., whom God preserve. It completely ignores the contribution to communications by the many Direct Current systems like the Creed teleprinter, the American teletype, Olivetti and Siemens, each reproducing from a distant typehead text which one typed on a typewriter-style keyboard.

True, their range was limited in that form by the capacitance and the resistance of the cables and



"THOSE DAMN BIRDS..."

overhead open wire, but each was capable of operating voice-frequency systems, sending to line a tone for a mark and no-tone for a space. These usually operated within a frequency band cut out from the middle of the 2700c/s channel allocated to a voice telephone circuit and were thus capable of amplification by repeaters and operated over circuits many thousands of miles in length, frequently in conditions, where speech was almost unintelligible.

I installed, maintained and operated them all over forty years ago, when 296 Signal Company, US Army and the British 11th Line of Communication Regiment, Royal Signals actually had a subscriber trunk dialling system working between Naples and Rome! VF telegraph systems were more than a step along the road to modems!

James W McHardy
Cumnock
Scotland

8000 PLUS I must admit that I've not come across this information before. I'm always interested to hear about things you feel we should have mentioned in an article but didn't. Often the problem is that we simply aren't aware of the question. So much knowledge and so little time to learn it all.

Dropped line

Hope you are well. Your company telephoned me on Tuesday or Wednesday of last week and I was asked what extra there was on TempDisc 8.2 from the original disc. You may recall the original

disc was given a brief review in 1987.

The original had 49 files on a single sided disc in LocoScript 1. TempDisc 8.2 has 130 files, on Double Density, in LocoScript 2 and features LocoMail. This is 81 extra files.

Yet; after only a 5 1/2 minutes conversation a male voice interrupted and said "I'm sorry but the conversation must stop Sharon has to get something out". It was an extraordinary action because you must have known it was impossible for me to describe 81 extra files in 5 1/2 minutes and, it was your telephone call!

The last thing I expected was a telephone call from "the professionals" asking me what was on the disk when you had the disk in your hands and then getting irritable with "your customer" when I attempted to explain 81 extra files.

To be perfectly honest with you, there are several areas of the computer industry that are more frustrating to deal with than the Inland Revenue and the Customs & Excise.

Fortunately the creative nature of the work and the feedback from my customers is satisfying and encouraging. I had a telephone call today from an impressed TempDisc owner in Scotland (Mr Ellis in Perthshire) who offered my wife and me a free weekend holiday with them if I'd give them LocoScript lessons!

Brian Thurston Worts
Exmouth

8000 PLUS Sorry about that Brian – but I did print your letter and hardly cut it at all.

Brought to book

I was rather surprised to read your slightly dismissive reply to Mary Turner (Postscript, Issue 30) concerning the use of "Exec" files in Supercalc. These files can be extremely valuable, especially for repetitive work. They are not difficult to understand and use once you have grasped the underlying principle. In fact you admit the usefulness of this type of file in another article (Protext Special) in the same issue. However, if you cannot find space for an article on the subject, it might help other readers if you mentioned the existence of Pitman's Computer Handbooks, and specifically, "Supercalc and Supercalc 2" by Peter Gosling (ISBN 0 273 02425 6). This inexpensive book gives a brief but adequate description of

the function.

Another request for information from Rob Marshall about books on Mallard Basic for the PCW receives the reply that there is no book specifically on this subject; the book I use is "Program your PCW" by Ian Sinclair (subtitle – "Mallard Basic on the Amstrad PCW8256/512") published by Glentop. (ISBN 1 85181 091 9). Ian Sinclair appears to have written a whole library of books on computing!

Having drawn your attention to the above two books, I am bound to say that there have been occasions when an article from yourselves has made clear what an author has obviously worked hard to make obscure, so please don't neglect the less obvious uses of utilities such as Supercalc. Many of us rely heavily on our monthly "fix" of otherwise inaccessible information.

G A Doyle
Wolverhampton
West Midlands

8000 PLUS The mere mention of Supercalc has generated a surprising amount of comment. Much more and I shall have to make good on my promise.

He wuz robbed!

Twice in recent weeks the familiar Basic fanfare has appeared on my PCW 8256 screen in the form shown in this screen dump:

```
A)basic
Mallard-a0 BASIC with Jetsam
Version 1,29
(c) Copyright 19a4 Locomotive
Software Ltd
All rights reserved
31597 free bytes
If whoever nicked the missing 8s
will return them to the owner c/o
8000 Plus no questions will be
asked.
```

J A Coleman
Stafford
Staffs

8000 PLUS Electronic smog – and on a similar note, we have had an amazing number of disc failures in the office recently. Since all the discs concerned were of a comparable age and in constant use I'm wondering if we now know the life of a three inch floppy in daily use – about two and half years.

Best in the west

Just a brief note to say that I think your magazine is the best I've seen for the Amstrad 8000 series. In fact

I like the magazine so much that, since I have problems obtaining it in this part of the world, (God knows why, you can find the others easily enough), I have decided to order it direct.

One thing though will you please, please be careful of the errors in the Listings. The error in the December Magazine had me going round in circles for days! I was glad to see that you corrected this in the February Issue.

P Perry
Ganllwyd
Gwynedd

8000 PLUS *Becoming a subscriber is a very sound move and one I can wholeheartedly recommend (and I'm completely unbiased too). Although we try for ubiquity there are practical limits to the number of shops we can put the magazine into.*

As to the listings – we aim for perfection but bear with us if we occasionally fall from grace.

Calling all starship pilots

Now that more PCW owners are admitting to playing games, can we have more tips or articles on game strategy (solutions). I am a battle weary Tau Ceti 'cadet' who has almost scratched his brains out trying to solve the codes on the 'Cipher' mission. I can only solve two codes out of four, from eight 'keys' collected from twelve reactors, are there more and

where? Please, please, can somebody help me before I go insane.

PS I found I could save the game position only after completing all four missions on one level, contrary to the instruction manual which states that it can be saved at any time, (CRL Group please note), except while in a mission.

G Pearson
Bradford
West Yorkshire

8000 PLUS *OK, all you closet games players, I know you're out there. If you have information other players might find useful write in and tell us all about it. We can't help since all our machines have Protext discs glued into the disc drives to keep us on the straight and narrow.*

Syntax error

I am a complete newcomer to the world of word processors and computers. I purchased my 9512 in October and have used it as a word processor and filing system (LocoFile) every day. It is fantastic, I am completely satisfied with it and have had no problems with LocoScript or LocoFile.

Your magazine seems to be the most literate, intelligent and interesting of all the periodicals I have seen about Amstrad computers, so I have sent my subscription to be sure of getting it.

Not long before I received my copy of LocoFile, I finally dared to insert the CP/M start up disc into the slot and turn my word processor into a computer. After all, there were all these listings to type in which would do magical things, like create a database, or sort things alphabetically, or draw pretty patterns on the screen, or even make it easy to check that you have typed the listing in correctly. Oh! Boy, was I in for a surprise?

The only program I've managed to make work is the Check2 listing. All the others seem to get stuck somewhere, as you say they might in your advice in how to type in a listing. I don't have the time, knowledge or overwhelming interest to sort out why, short of checking the listing for errors, so I gave up bothering with these programs until I saw the SPIROGREFX listing in your Feb. 89 issue.

What a delightful way to amuse my four year old, who gets so excited when allowed to push the buttons, but is always disappointed

at the result. I ploughed through the listing, checking and rechecking every line. It looked good, but before I ran it I checked with CHECK2, just to be on the safe side.

Oh dear! Oh dear, I now have a real problem. In the listing, Line 50 has 1s\$=E\$ at the start. Lines 130-190 also have 1s\$ or 1\$ in them. These were all OK before I ran CHECK2. Now they read 1 s\$=E\$ or 1\$. An extra space has been inserted. All 1s\$ or 1\$ now read 1 s\$ or 1\$. I have tried editing the affected lines, erasing them completely and rewriting them, saving the corrected listing in a new file, resetting the machine and starting again, all to no avail. The spaces still appear, so as I run the programme I get 'Syntax error in line 50'. Over and over again.

In previous listings I have always been able to edit any errors in the lines I have typed with no problem. Strangely, in SPIROGFX any other errors in the lines are correctable and they have been assimilated into the program with no bother. Only the spaces refuse to go away. After running CHECK2 on IROGFX listing, not only did I get errors that weren't there before, but I can't edit them out.

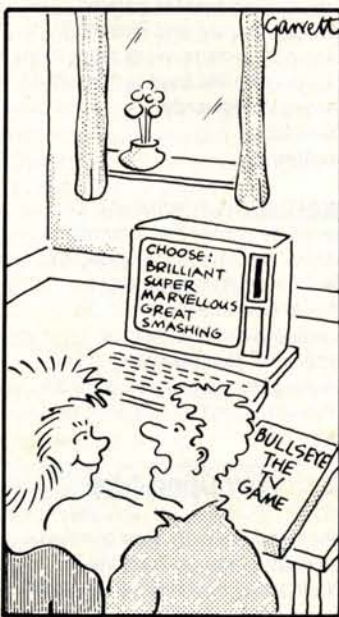
Can you please tell me why? Being a complete beginner I'm sure I've made some basic (Oh dear!) error. I hope that's what it is. I saw a programme on the television recently about computer viruses. Have I got one? Can it be cured? Will it spread to LocoScript? Will I have to bake my PCW in a hot oven to sterilise it?

Please help, my four year old boy will brain me if he can't draw pretty pictures soon. (There's a thought, could he catch a computer virus? Heh! Heh!)

Tony Gill
Argyll
Scotland

8000 PLUS *What an awful lot of whinging that was. How can basic be difficult? It stands for Beginners All purpose Symbolic Instruction Code. I think you're just winding me up but being trusting soul I'll answer the basic (groan right back at you) query.*

Section 4.3.1 of the Basic manual – choosing variable names – says among other things 'use any of the numbers 0 to 9 at any position other than the first character'. You are in fact confusing the letter L with the number 1; this is caused by a virus and you will soon find yours4ll confus3ng other numb4rs and l4tt4rs.



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ADVERTISERS INDEX

Abacus.....	73	Iansyst.....	25
Advantage.....	43	Isenstein.....	66-67
Aladdink.....	48	K&M Computers.....	58
Ansible.....	89	KCS.....	22
Arnor.....	4	K.F. Heywood.....	89
Astrocalk.....	56	Kintech.....	89
BBD Dust Covers.....	44	Locomotive.....	14, 25, 28, 31
Belmar.....	89	MJC Supplies.....	40
Bessemer.....	64	Manx.....	44
Bradway.....	73	Margin Maker.....	32, 43
Brainstorm.....	39	McGregor.....	64
CP Software.....	IFC	Meridian.....	16
Campbell Systems.....	51	Micromedia.....	32
Caspell.....	13	Microsnips.....	16
Compumart.....	IBC	Moonstone.....	58
Computer Valet.....	60	Newstar.....	OBC
Composit.....	56	RSC.....	18-19
Connect.....	44	SCA.....	43, 73
Com-Stax.....	39	SBS.....	9
Copy Comm.....	32	SC Coleman.....	64
Cornix.....	73	SM Engineering.....	58
Corwen.....	73	SPA Associates.....	73
Cwmbran.....	48	Silicon City.....	60
Cyca.....	52-53	Software Imperative.....	37
DGA.....	60	Sportsoft.....	64
Data Access.....	56	Suredata.....	48
Dataline.....	56	Tecnation.....	64
Disc Design.....	60	Thurston Techniques.....	48
Dixons.....	89	Topologika.....	58
Encyclosoft.....	56	West Of Britain.....	6
HD Designs.....	64	Wight Scientific.....	60
Hardsoft.....	60		
Headline.....	58		

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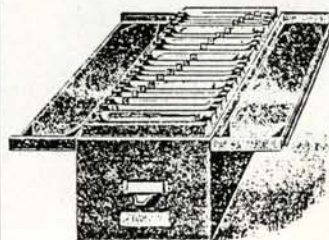
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The latest comments from
the cutting room floor

Where did the future go?

We thought you'd never ask. In fact the entire company upped stumps and joined the team coach for darkest Gloucestershire. Much against our will we were ruthlessly bundled off for a free weekend of en suite showers and late night carousing; but at least it was tax deductible.

The purpose of all this – and note how it elegantly combines such disparate ideas as having fun and working for nothing – was to allow us all to meet new members of our rapidly growing organisation (there are six magazines published here at Future) and to listen to three (I counted them) lectures on how wonderful the company is, how wonderful we are and how we're expected to achieve new heights of wonder in the months and years ahead.



This is one of the more interesting pictures taken at the Country Club (Oh, didn't I mention that we were staying at a country club?) which in fact show three past and present editors of 8000 Plus.

On the left is Ben Taylor, an amazingly clever chap and a man of many parts – not all of them his own as you can see from the hand he's using to hold the glass – now risen via ST Amiga magazine to those lofty heights where no one knows enough about what he's doing to comment on the way he's doing it.

Rob Ainsley is in the centre, a sad figure dressed in clothes handed down from his big brother – being editor on the new weekly he was only able to stay for a few minutes before getting back to his desk for the mid-afternoon edition.

The strange looking chap on the right is yours truly. I can assure you that the look on my face is not excitement but hysteria, a direct result of learning only two days previously that I was to take over from the very capable Rob.

Past my sell by date

CP/M supports date stamping of files – as you may know if you've actually read the manuals – but I've never actually met anyone who uses the facility, or so I thought.

I have an old CP/M 3.00 machine (pre-Amstrad in fact) which my 12-year-old son uses. He also uses mine on occasion. The other day he asked me where INITDIR was

Disc commedia

Well of course we know all about computers here. we're computer journalists (har. har) and some of those here are even in the NUJ and that proves it must be true.

But there's always a hippo in the pond of life and in our case it seems to be the Ad Sales department. To a man and woman they are warm, generous human beings who would offer to look after your last fiver but they don't know much about computers (we had one in last week looking for the manual that goes with his propelling pencil).

To help them cope with the enormously long lists of people they know, the company bought them a PCW a few months back. So this ad person walks in, see, and says their disc won't work anymore and can I have a look. Beguiled by her beauty (it was a lady ad person) I agreed, and was handed an original master disc.

'Have you been using this all along?' quoth I. 'Yeth,' quoth she. I explained about backups and such like and then foolishly put the disc into my PCW to take a look. Unpleasant sounds ensued. I tried the high density drive (sometimes it will read a damaged single sided disc), more noises. Taking it out I asked the question I should have asked to start with – when had it stopped working?

The answer was that it stopped working after being dropped into a waste bin full of coffee dregs. My machine is now away having the disc drive heads cleaned and I'm going to have my head done too.

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The PCW as a window on the sky

on my enormous collection of discs and I had to admit that the only copy I knew of was on my original master disc since I had never used it.

It turns out that he datestamps all his files, makes the machine work much harder than I do and has a lot less paper around his desk as a result.

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- ❑ A new manual with comprehensive indexing and many examples makes the power of *Cracker* accessible to a wider audience.
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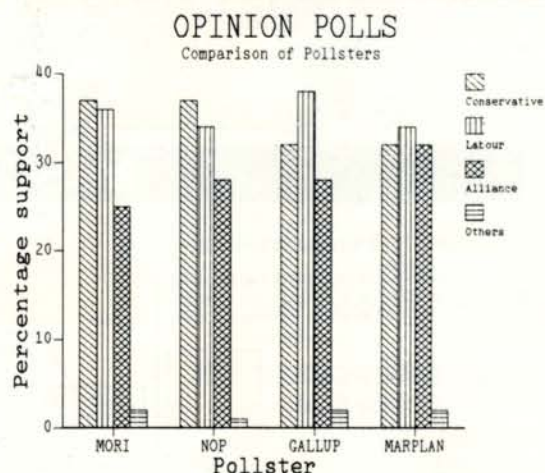
Cracker:

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Example plot from a PCW printer

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